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THE SUPPLY OF INDIAN COTTON TO ENGLAND.

THE *Times* of Thursday last contained three letters of great interest to every one who looks at the present critical condition of our prospects of a supply of cotton for the present year, with the consideration due to the vast importance of the subject to the welfare of this country as involved in the prosperity of its manufacturers. Each of the writers has a claim to attention beyond that due to his individual ability, from his official position as the organ either of the Indian Government, or of the Cotton Supply Association at Manchester; a position which, while it necessitates their looking at the question in different points of view, at the same time furnishes a guarantee that they are all resting their statements on information diligently procured and carefully tested. Mr. Haywood and Mr. Sutton are both Secretaries to the Cotton Supply Association; and the slight discrepancies which in one or two instances occur in the opinions which they advance are to be explained by the fact that the letter of the latter bears a date nearly four months later than that of his colleague. Mr. Grey is the Secretary for the Home Department in the Government of India, and writes as the mouthpiece of the Governor-General himself.

It is in no spirit of antagonism that the Association address themselves to the Indian Government, but rather with the friendly object of aiding it by explaining their own necessities, the extent to which they hope to have those necessities supplied from India, and the obstacles which have hitherto interposed to impede or prevent the fulfilment of their expectations from that country. They do ample justice to "the wisdom of the steps" already "taken by Lord Canning for enabling India to meet their future requirements;" and of "that enlightened policy which has dictated the publication of the resolution bearing on measures for opening the common roads of the country throughout the cotton districts of India." And if in one or two points, as in their comparison of the tenure of land in America and India, they are travelling a little out of their province, and seeking to construct an argument, which, as Mr. Grey points out to them, the wholly different circumstances of the two countries deprive of all solid foundation, it is evident, on the other hand, that in the majority of instances the measures which they urge are highly necessary to give that security to property, without which capital and industry can never have the stimulus indispensable to call forth their full and beneficial exertions. Indeed, that such measures are necessary is recognized by Mr. Grey, when he replies that the Government has begun to take steps for the adoption of some, and has others under its anxious consideration.

The association demands that "efficient courts shall be established in every cotton district, which shall have power to enforce contracts between growers and purchasers, and enable Europeans to recover with promptitude any advances that may be made for the purchase of produce." This measure Mr. Haywood expects, will also "enable the ryot to rid himself of the necessity of paying exorbitant interest for temporary accommodation of seed or money; and to deal directly with the European." The practice of exacting usurious interest has at all times been one of the great impediments to the growth of solid prosperity in India; but we gather from Mr. Grey that the ryots are not the only class which requires protection, but that those who deal with them may also demand to be ensured against their "receiving money advances, and then wilfully neglecting

to fulfil their share of the agreement on which such advances are made." On this subject Mr. Grey's reply strikes us as insufficient. He "is directed to state that great progress has been made, and is still being made in the improvement of local courts, and that more has been accomplished in this respect within the past two or three years than during a long series of previous years." The remissness of one's predecessors, though a common, is certainly not a valid excuse for one's own shortcomings. And if the present insufficiency of the courts in question be admitted, as it seems to be, we can perceive no valid reason why they should not at once be put on a proper footing, and rendered competent to deal with such palpable grievances as those of which the Cotton Supply Association complains, instead of creeping with uncertain step along the perplexing path of a progressive reform. There can hardly be a good reason for a bit by bit accomplishment of what may be done by one single stroke; and, of all things in the world, insufficiency of justice is the most crying practical evil in a state, and the one which will least bear any delay in its rectification. Somewhat akin to this part of the subject is Mr. Haywood's complaint of the annoyance inflicted on all parties to the cultivation of cotton, by the Stamp Tax, which (though the accuracy of his statement is questioned by Mr. Grey) seems fully borne out by the quotation made by Mr. Sutton from the letter of one who speaks "from personal experience," and who affirms, not only what is obvious enough, that they cause great trouble, labour, and embarrassment "at the several stages of the merchant's time," but that the stamps "are not to be procured whenever and wherever they are required." In fact, they are wanted at all kinds of hours, and often in remote villages; but they "are only sold by licensed vendors, and at stated hours;" a delay in procuring them often, of course, operating as an entire impossibility.

The objections urged by Mr. Haywood to the existing state of land tenure in India we may pass over, partly because that is too large a subject to be considered solely with reference to the growth of cotton, and partly because any alteration of the existing system must manifestly be gradual, is already under the consideration of the Government, and is also obviously rather a question for the new Governor-General, than for one on the point of relinquishing his office; and we will proceed to the two most practical suggestions which the Cotton Supply Association wishes to enforce. First, that the Government should continue to take every possible step for opening the communication of the districts capable of producing cotton, with the great towns and with the coast. On this most important subject there is no difference of opinion between them and the Indian Government. Mr. Grey admits as frankly as Mr. Haywood can desire, that "to facilitate the transport of cotton, by improving roads and means of internal communication is a duty which undoubtedly devolves on the Government;" and he pledges the Government that "so far as its financial resources will permit, it shall not be neglected." But on the other point the two parties are doubly at issue. Mr. Haywood complains of the quality of the cotton received in this country from India, as compared with the quality of the American article; and, desiring, above all things, "to warn the cotton growers and exporters of India against the supposition that cotton of any sort, and in an inferior condition, will be bought up in this country," points out that "the want of proper attention to the picking, ginning" (that is to say, cleaning by a machine called a *gin*), and packing of Indian cotton, has retarded its consumption in



Great Britain;" and he evidently imputes the want of care of which he complains, to the remissness of the Government.

To this Mr. Grey replies truly enough, that this is a matter "in which the Government can do nothing, but much may be done by the capitalist who lends money to the cultivator, or who buys the produce from him." But he also replies, with what we believe to be far inferior accuracy, and what at all events does in fact admit the necessity of the warning given by Mr. Haywood, that "the general testimony of well-qualified observers, Americans as well as English, goes to prove, that in the details of cultivation the native of India has little or nothing to learn from the agriculturists of other quarters of the globe; and that it is only in the gathering, cleaning, or transport of cotton, and not in its cultivation, that much improvement can be expected." Mr. Sutton on this point fully corroborates his colleague's assertions, and disposes of Mr. Grey's praise of the skill of the Indian cultivator by reference to the "testimony of travellers of repute;" but much more by the fact that "in America 600 lbs. of clean cotton per acre is considered an average crop, while in India the average crop does not amount to 100 lbs. an acre."

As in all questions of this kind the practical part is that of the most real importance, it is to this especially that we would call attention. Not the attention of the Government, who, except by recommendation, can do nothing in such a matter, but the attention of the cultivators whose energy easily can, and alone can, rectify the admitted defect; and the attention of the capitalists, who have the most powerful means of acting on the cultivators, and whose interests are equally at stake with theirs. They have now such an opportunity of creating for themselves a vast trade as in their most sanguine moments they never could have hoped for. If "the want of proper attention to picking, cleaning, and packing the cotton" has hitherto retarded its consumption, it follows almost as a logical consequence, that the directing proper, that is, sufficient, attention to these details, will secure it the chief possession of our market. It is obviously the interest of our manufacturers to draw their supplies from our own dependencies, provided they can be obtained in good condition. That they shall be obtained in good condition the cultivators have it clearly in their power to secure. Let them only remember that "whatever is worth doing at all is worth doing well." The cultivators of India are desirous to grow cotton, but, if it does not answer to grow good cotton, it can certainly never answer to grow bad cotton. Growing bad cotton, or, what is the same thing, picking, cleaning, and packing it so carelessly that what is grown shall look like bad cotton, will disappoint those who wish to depend on them, and will ruin themselves. If they grow good cotton, pick, clean, and pack it as they ought, they will enrich themselves, they will be great benefactors to India, and will be doing no small service to the mother country.

FRANCE AND ITALY—PAST AND PRESENT.

WHEN so much may depend upon what happens within a very short time, it is surely worth while, with a view to a proper appreciation of the present, to bestow a not inattentive study on the past. We may remember that in many most important features the acts of the French Government of our day are but a repetition in fainter colours of the acts of the first empire. Nay, it is even curious to see how often, in their lesser details, the nephew follows in the steps of the uncle. Who, for instance, when noting, as we did the other day, the demonstration at Dives, could think it superfluous to recollect how precise a copy that exhibition was of the *coup de théâtre* of Napoleon I., when, in 1804-5, the ominous "Camp of Boulogne" was prefaced and commented on, as it were, by perpetual allusions to the conquest of England, by what, for their own special purposes, Imperialist politicians are pleased to call a "French" prince? People forget these things, whereas in such cases as that before us it is dangerous to forget anything.

Again, there is the question of the annexation with Sardinia: the project is no recent one—no invention of this hour. It formed so essential a subject of meditation with the first Bonaparte, that till lately there existed, and perhaps there still exists, a most remarkable document drawn up by his orders between the years 1808 and 1810, entering into all the capacities of the island, and particularly intended to lay down the principle that no second-rate power could make the possession of Sardinia a profitable one. The main object of the report in question (believed to have been drawn up under the superintendence of the famous banker Ouvrard) was to prove that the island, which produced comparatively little to the Crown of Savoy, might easily be made to render ten or twelve millions of francs annually to France. This fact deserves the more attention, because it cannot possibly be said to be "got up" for the occasion, while it has, nevertheless, an evident bearing upon the aspect of contemporary circumstances. The reigning idea of the time, moreover, about the island of Sardinia was, that its capacities of all sorts were lost upon those who possessed it; for, strange to say, in the correspondence of Count Joseph de Maistre in 1812 (the Count being then Minister from the King of Sardinia to the Court of St. Petersburg), we may discover traces of the same conviction; and we

find M. de Maistre writing home more than once, "The island is manifestly going to destruction in our hands; it ought to belong to some great power." Only Count de Maistre, for whom Napoleon I. is the personification of all evil, and whose surname for him is that of "Demonium Meridianum," points out England instead of France as the power which should possess it. But all this question of future preponderance for France and the consequent depression of English interests in the Mediterranean, was inseparably connected with the position of France in Italy. The nucleus of the whole was, under the first Napoleon, as under the present one—Rome. No one felt this better than the mighty Corsican himself, than whom perhaps no more complete type ever existed of what the complex public men of the Italian race once were.

We have arrived at a moment now when we must not forget the past, for those whom we are watching have it before their minds at every hour. The first Emperor laid hands upon the Pope and brought him a captive to Fontainebleau, which (as far as matters have as yet proceeded) is far more than the second has ventured upon; yet the first Emperor was obliged to get rid of his troublesome guest upon the best terms he could make; and here we may find a clue to one of the chief reasons of his nephew's hesitations. There are voluminous records yet extant of the terrible perplexities of Napoleon I. with regard to Pius VII., and those perplexities are now repeating themselves with at least all their former force. France is by no means less Catholic than she was in 1810-11; probably she is much more Catholic, but she is infinitely less theological, and this is a point not without importance.

Any one who has studied the spiritual and moral history of France will see at a glance that, had the question of the "temporalities" been opened two hundred years ago, it would have had a good chance of being peacefully solved, because under Louis XIII. and Louis XIV. religious thought in France was highly cultivated, and faith was very strong. The men and women of the country in general were then, for the most part, earnest, highly informed Christians. It is not impossible that they would have discussed the Papal question with calmness as well as sagacity, and that sufficient Christianity would have been found in their Catholicism to have borne the abolition of the temporal power of the Papacy.

Whether this be so or not, at all events the case is changed since the Revolution. Religion has been made to serve the purposes of party spirit, and moreover the result is that society in Paris, and through the greater part of the country, is divided into two distinct sections—bigots and Atheists, each equally ignorant and intolerant. The Catholics (and they will probably be found to outnumber their opponents) are narrow-minded and retrograde, but they may be used as a support to the throne; the Atheists are, to a man, revolutionists, and, in the long run, no dynasty can expect to be consolidated by leaning upon them.

This is the real difficulty; it is the same in 1861 as in 1811, and to omit to recognize it is one of the greatest errors we in this country can commit. If the system of Blue-books could ever be in France what it is with us, the readers of such records would probably be astonished to see how close is the resemblance between the harassed state of mind of Napoleon I., as manifested in his communications with Cardinal Fesch and M. de Fontanes, and that of Napoleon III., as exemplified in the despatches received by General de Goyon, or Messrs. de Rayneval or De Grammont. The truth is, that France is at bottom the same France, and by degrees, as she awakens from her apathy, and becomes more French, it becomes less safe for her ruler to run counter to her instincts and traditions. There is another truth which in this country we hesitate to look in the face, which yet has a great influence on the imperial policy in Rome—that, owing to a complication of circumstances, and to French ignorance and perversity, every day that passes tends to make Louis Napoleon recognize in the enemies of Rome his own enemies, and in the party who in France advocate the retirement of the French army from the Eternal City, the men who would overthrow all thrones, with all creeds. We repeat, therefore, that to appreciate the case in all its intricate bearings, we should, however, carefully study the events of the past. With actors totally dissimilar, circumstances have been and are singularly alike, for the simple reason that the France of to-day is much more the France of fifty years ago than we choose to acknowledge, and that consequently in the views of French statesmen anxious for the preservation of the present dynasty, there still exists a necessity for what is called a "French policy" in Italy, and above all in Rome.

THE NEW EDUCATION MINUTE.

IT has been found impracticable to organize a national system of education, strictly so called. Conflicting sects, voluntary dissenters, and ultramontane churchmen, have upset every plan that has been proposed, and have rendered legislation in this direction impossible. Grants under certain restrictions from the Committee of Council on Education, presented a compromise which all parties appeared to have accepted. No doubt this system was open to grave objections, but in one respect it had numerous advantages, as acting as a salutary and successful stimulus to teachers and pupils. Having been to all appear-

ance permanently settled as a national institution, open to improvement in details, but in outline and in principle irrevocable, young men and women, stimulated by its inducements, have qualified themselves in great numbers for the important and responsible duties of teachers. Managers of schools and teachers of all kinds took a deep interest in the arrangement; and, if the sum annually voted by Parliament was very large, there was the high reward of seeing it laid out in the moral and intellectual education of the masses in every part of the country.

Suddenly, however, by a stroke of his pen the President of the Committee extinguishes the whole system of administration, and introduces a novel and untried experiment, to the trial of which he must sacrifice the claims of common justice and the obligations of a solemn compact. It abolishes all grants under the existing system, with the exception of those for building schools. Under the former code it was the interest of managers of schools to employ pupil-teachers. Under the new code it is to their advantage to do without them. A school with fewer than eighty children requires no pupil-teacher. Where pupil-teachers are continued, the indenture is cancelled and an agreement, terminable at the end of six months, takes its place. Under this system really competent men will refuse to enter the profession of teachers; the training-colleges raised at so great a private expense will be destroyed; and the quality of teachers, heretofore steadily rising in all the elements of influence and respectability, will be deteriorated. If we leave the money question, and turn to the plan of inspection now proposed, we shall find that this rash revolution is utterly ruinous to the very best and most precious interests of education.

The sole tests of the efficiency of a school are to be reading, writing, and arithmetic. Moral and religious considerations are wholly ignored. Regularity of attendance is set down as the pupil's highest merit, while, if a child be absent on the day of inspection, from illness or other unavoidable cause, or fail to attend during the last eight days of the year, the allowance for that child must be withheld. The teachers would be constrained to solicit the parents to send their children, and the parents would soon discover that the school needed them, not they the school, and thus the whole character of the institution would be lowered; the very class which it is most desirable to reach and reclaim, the idle and the irregular, the sources of the greatest trouble, must be given up, and the least in want of discipline most attended to, or else the managers of schools, at their own expense, must act on this section of the young, or leave the teacher to deal with them, without any prospect of remuneration for his work.

Nor is the principle that guides the Government inspection less liable to objection. The judgment of the Inspector is to be secret. On that judgment, founded on elements which he alone possesses, £50 may be withdrawn from the grant in the case of a school dependent for its existence on that grant. A number of boys may be absent from school on the day of inspection, or on the last eight days of the year, owing to an epidemic or very severe weather, and such absence may sweep away half the Privy Council grant. Large schools have been built, laborious committees organized, and engagements entered into, on the faith of the existing administration being continued, or at least ample notice being given of its modification. Mr. Lowe, with the best intentions, has been utterly misled. He will find that he has given rise to an agitation that will appeal to Parliament with great effect, and we believe with entire success. But, meanwhile, the growing prosperity of our schools, which has commanded the admiration and respect of the country, will be arrested for a season, and mischief will be done which cannot soon be repaired. We are not urging the institution of a new system of aiding educational efforts; any such proposal might naturally awaken doubts, and might fairly excite suspicion and controversy; but to overturn a system which is already in action, and which has been the foundation of many positive and of more implied arrangements, is a different matter, rarely consistent with expediency, and more rarely still with justice.

AUSTRIA A FREE PEOPLE.

AUSTRIA is now a free country. Her Government has ceased to be despotic; her people take rank among the free nations of the world. Austria, a land of liberty and popular government, of self-government and independent Parliaments, of limited monarchy and ministerial responsibility, of cabinets standing or falling at the pleasure of a House of Commons, of a free people determining their own policy for themselves, and calling the sovereignty of the Cæsars to account for the daily exercise of the prerogative—the shock is too violent to our associations, we require help to enable us to master such an idea. We wonder, like Lysias, with a great sum bought we this freedom; and we are hardly able to conceive how the freedom of other nations is to be acquired at a less cost. We need some stirring event to impress the magnitude of such a revolution on our imaginations. When an insurgent capital in 1830, in three “glorious days” visited the violation of the law on the Bourbons with the same penalty as we had applied to James II.; when, in 1848, a republic rose upon the ruins of a royalty, which had forgotten to identify its

interest with that of the people; and when again, last year, a guerilla chief swept away, with a whirlwind force, a tyrannical dynasty, which had neglected to strike its roots into the hearts and affections of its subjects, we were startled by the suddenness and violence of the catastrophe; we held our breath with wonder and curiosity; we understood that one great institution had perished and made way for another, and we resigned ourselves to the agitating excitement of surprise and hope. But when a new form of government has been bestowed on a country, without an outburst of popular power, no conspiracy, no fighting in the streets, no ancient throne overthrown, no victorious dynasty raised into being, our minds fail to take it that a great thing has come to pass; we miss the guarantee for reality, which success achieved through danger and blood so vividly supplies. Yet this Austrian revolution is a great event, not only effecting a vast change in the position of a great power, but teeming also with consequences for the future history of Europe.

England from her heart rejoices over this most happy event, as she always does rejoice over the progress of liberty in the world. If she has appeared to hesitate in the bestowal of her sympathy, it has arisen solely from the difficulty of assuring herself of the reality and extent of this change in Austria. History records few constitutions freely given by absolute monarchs. The very name of Austria reminded Englishmen of Metternich, of the Holy Alliance, and of petty tyrants upheld in Italy by the bayonets of a foreign power. But these things have passed away for ever. The debates in the Parliament at Vienna prove the reality of the change that has taken place. The Austrian House of Commons has done a thing unheard of before in that country; it has discussed as an assembly of free men, invested with the ultimate right of judging, the policy of the Emperor's government. The Cabinet avowed its responsibility to the House, and staked its existence, not on the pleasure of the Crown, but the confidence of the representatives of the nation. Members of great eloquence and courage have criticised the measures of the Cabinet with the most outspoken severity, and the press has reproduced their speeches with the most unrestricted freedom. The House of Commons, too, has not only examined and judged, but what is more, it has begun to act. Its committee has organized a scheme of religious toleration, which those least inclined to trust the sincerity of the Austrian reformers acknowledge to surpass, in some points, even what England has attained. The country of ultramontane intolerance and the Concordat has through its representatives proposed laws, which proclaim the equality of all religions in the State, which sanction civil marriage, which forbid the interference of the Government in education, and separate secular instruction from religious in the national schools. Let people recollect the religious struggles in England of thirty years ago—the long contest for Catholic emancipation—the reign of Orange bigotry in Ireland—the oppression of Protestants, and the extinction of individual liberty in France—and they will be able to estimate the prodigious progress which Austria has made in the path of popular government. The law has not yet been passed, it is true; but its enactment rests as entirely with the Austrian, as it would do with an English Parliament. The court does not interfere; the Ministry neither threatens dissolution, nor strives to influence by intimidation or court favour; the march of the Parliament is as confident and as sure as if it sat in Westminster. Constitutional life has begun in Austria.

It is deeply to be lamented that an event of such happy augury should be clouded by a strife which arrays brethren against each other. It is a matter for wonder and real sorrow that the birth of popular institutions should be the occasion of discord among the people itself. Both parties, in this sad dissension, have the unaffected good wishes of England; for it is no contest between court and people, between despotism and liberty, which here divides our sympathies. Austrian freedom England desires to be the freedom of Hungarians, Bohemians, and Germans alike. And the liberty which Francis Joseph has bestowed on Austria, and which already is manifesting its life at Vienna, is bestowed upon all his subjects equally; he desires that Hungary should be as free as Austria. Hungary herself can have no other object; and if she seems to reject the gift, her objection is probably more to the manner in which it has been proffered, than to the thing itself. No doubt she has an abstract right to refuse her consent to the measures proposed by the Government, but to insist on extreme abstract rights is very rarely wise in political any more than in private life, and is very apt to lead to results greatly at variance with the object aimed at.

There seems some danger of this being the case in the present instance. If Hungary had demanded separation from Austria, a distinct national existence, her position would be intelligible. But such an intention the Hungarians expressly repudiate. Not only do they profess loyalty to the dynasty of the Hapsburgs, but they have disclaimed the thought of breaking up Austria into two states; yet they put forward demands which can only produce disruption. With our own past experience to guide us, we see the impossibility of long working successfully an union which shall consist solely in the states united having a common sovereign, but which shall leave each country free to declare war or peace, to grant or refuse supplies as it pleases.

Nor are the Hungarians dissatisfied with the nature and efficiency

of the institutions granted to the whole people; they have not pointed out any defects and faults, which justify suspicion, and which they demand to be removed, before they give their adhesion to the new Constitution. On this point they have maintained an absolute silence. They have not remonstrated with the Crown on the inadequacy of the guarantee conceded to the United Parliament, nor complained of injustice in the share of the representation allotted to Hungary, nor held any consultation with their fellow-subjects of the other provinces for producing an amendment in the grant of the Crown. They have not expressed dissatisfaction with the new Constitution, as wanting in a single one of the legitimate securities of liberty, or as failing to do justice to their own relative claims. So again the question recurs, why do the Hungarians refuse to accept the freedom with which the Austrians are content?

They tell us that they had an old constitution, and that what they desire is its restoration. But that old constitution—the constitution of 1849, as distinguished from that of 1848—was a very imperfect and slender affair. It never did, for it never could, protect the Hungarians from being despotically governed. The Diet possessed, in law, a control over the direct land tax, a very trifling sum, but the constitution left all the revenues of Hungary, with this exception, at the disposal of the Emperor of Austria. The voting of the recruits for war was also a right of the Diet; but the Diet had nothing to say about the management or the application of the military force of the country. In all other respects Hungary was absolutely governed from Vienna. The Emperor determined the policy of the nation, was arbiter of war or peace, could enforce indirect taxes at his pleasure, in a word, governed the country at his will. And the natural and inevitable historical fact was that Austria and Hungary made up one state, because the supreme government was truly and actually in the same hands. It seems, therefore, that the demand for the old constitution would place the government of Hungary in the hands of an Austrian parliament, which contained no Hungarian members, but which, by determining the policy of the Emperor, ruled over Hungary through him. Equally clear is it that the new constitution gives the Hungarians infinitely more power than they ever possessed under the old, whilst the large number of members allotted to Hungary would invest them with the greatest influence in the state.

The Hungarians eke out their answer by demanding further the restoration of the laws of 1848; and these laws are the kernel of what they claim. They ask for an independent Ministry and an independent Parliament. This certainly is not the old constitution; it is a manifest violation of it; for whereas before the same authority of the Emperor laid down one policy and one government for Hungary as well as Austria, the laws of 1848 would place the government of Austria in one set of hands, and that of Hungary in another. And no one can doubt that this is a scheme which would not hold together ten years; on the first serious difference of views, a Russian or Turkish war for instance, the two Parliaments would come into deadly collision, and civil war or separation must ensue. The English constitution controls the crown by the House of Commons, the Lords by the fear of new peers, the Commons by an appeal to a common people; but M. Déak does not seem provided with any theory of government which would explain to us how a dead-lock between the Austrian and Hungarian Parliaments could be dealt with.

In all great political difficulties, the true English principle is compromise; and compromise alone can furnish a happy solution for Hungary. But the necessity of compromise cannot be fairly recommended to one side only. The Emperor of Austria is urged to a compromise, though it is not quite plain what compromise is expected from him. His advocates have no little reason on their side when they argue that he, and he alone, has already offered a compromise. He has given up his extreme right of absolute government; he has transferred his political supremacy to a free Parliament—the greatest concession which a sovereign can make; and if this view be correct, they must also have some reason to claim that the Hungarians should now make some compromise of their extreme rights, and not pursue a line of conduct which, in effect, makes all compromise impossible. The Emperor cannot grant the laws of 1848 without dissolving the state, and no man can pretend to call this compromise. The Hungarian leaders may well, and without any loss of honour or sacrifice of the real interests of their country, recede from the laws of 1848 and fall back on 1847—the old constitution. This seems a preliminary indispensable to even the commencement of negotiations between Hungary and Austria. We say Austria purposely, because the Hungarians and their English advocates misconceive the position entirely when they represent the Emperor as the other party in this dispute. He is now, since the creation of the Reichsrath, but the executive power of Austria; the nation belongs to itself, to its Parliament; and the Hungarians ought to remember that the collective state will never consent to be dismembered.

JUSTICE OUT OF TOWN.

IN days when nearly all men work so hard, and when fresh air and change of scene are not only so fashionable, but are reckoned so absolutely necessary for health and longevity, to say nothing of

pleasure and recreation, it is doubtless a great hardship on any elderly gentleman of high connections, refined tastes, and ample income, to be compelled to remain in London during the month of September. And although stern necessity forces considerably more than two millions and a half of people, who are not blessed with sufficient incomes, to forego, even during that lovely month, a sight of the woodlands, the mountains, or the sea-shore, unless they take a hurried trip by an excursion train, and run the imminent risk of death on the way home, from the carelessness or incapacity of some overwrought railway pointsman or signaller working fifteen hours per diem for fourteen shillings a week; the greater hardship of the lot of these toiling millions does not in the least degree diminish the natural desire of all the upper ten thousand—or upper hundred thousand—to get away from the smoke of London, with all the celerity they can, and to restore the strength of jaded nature and the elasticity of the weary brain by the *dolce far niente* and fresh breezes.

But as the work of the world must go on, in spite of the holiday taken by the chief workers, it becomes necessary that some even of the privileged upper hundred thousand must remain in town, whether they like it or not. Even Lord Palmerston, who works as hard as anybody, finds that he cannot stay at the pleasant castle at Walmer for a whole month, looking through a telescope at the white cliffs of Grisnez and Calais, on the opposite shore; but runs up to town once a week, or oftener, to keep matters straight, and put his hand to business. Or if he be absent from choice or necessity, some other Minister remains in London to do the work that may offer. In like manner, the three Vice-Chancellors, Sir Page Wood, Sir James Stuart, and Sir Richard Kindersley, together with Sir John Romilly, the Master of the Rolls, who all kept pretty closely to their work for the greater portion of the year, consider themselves as much entitled as any other professional or public men to have their holiday in the long vacation, and to betake themselves in August, September, and October, wherever their fancy leads them.

But, as there is equity business to be done even during the long vacation, these high officials arrange, or are supposed to arrange, the matter among themselves; and one of them, once in four years, becomes, for the public good, the legal hermit of the metropolis; and dwells in a town instead of in a country house. It is understood this year to fall to the turn of that excellent judge, Sir Page Wood, to make this little sacrifice of personal comfort in the interest of the unfortunate persons who have equity suits in progress, or who may be under the unhappy necessity of making application to an equity judge. And considering that the Vice-Chancellors have large salaries, and that it is only once in four years that this particular hardship falls to their lot, it cannot, if all things be taken fairly into account, be considered a very great infliction either upon their health or their temper. Sir Page Wood, however—speculating, perhaps, on the absence or paucity of important business,—has deemed it expedient to quit town like the rest of the world, and to take a little quiet enjoyment on the Suffolk coast, leaving a chief clerk to decide in the ordinary chamber cases, that are too trivial to need the knowledge, acumen, and authority of the Vice-Chancellor himself.

We certainly should not begrudge Sir Page Wood, or any other high functionary, this little indulgence, if he would keep within reach, and come up to town about once a week, or whenever his presence became absolutely necessary. But Sir Page Wood, whom it would only cost the time, which he owes to the public, and his railway fare, to and from the place of his temporary abode, to come up to Lincoln's-Inn, insists that the parties, their counsel, and their solicitors, shall go to him in the country. Sir Page Wood is the mountain, and the public is Mahomet; and as the mountain will not stir, Mahomet must. When it is considered that the time of an equity barrister has to be paid for, as well as his railway fare, and that the time of solicitors and witnesses is also a marketable commodity of no slight value, it will not cause the public much surprise to learn that in three cases a week or two ago, in which the parties were compelled to go to Woodbridge to meet the Vice-Chancellor, the expenses that fell upon the suitors were no less than £1,000; and in one of the cases nearly £500.

Such is the fact as generally represented. If the statement be true, we must say, as has been said before, with less provocation, this is much too bad. Expenses in equity are already more than sufficiently onerous; and to add to them in a manner like this is a hardship—if not an injustice—so great, as to require only to be brought prominently under the notice of the judge himself to secure a remedy. Sir Page Wood—of whom, as a judge and a gentleman, we desire to speak with the very highest respect—is not, probably, aware of the extent of the pecuniary burden he inflicts upon the suitors. The solicitors and barristers are not very likely to complain, for they are well paid for their time, and have the enjoyment of a run into the country besides; but the unfortunate suitors who feel themselves aggrieved can only reach the ear of the judge through the press. In their name and behalf we express the confident belief, that Sir Page Wood—unless incapacitated by illness, which we should greatly regret to hear—will, as soon as the case is made known to

him, reverse the parts of Mahomet and the mountain, and come to town when he is needed; as the Prime Minister does, or any other official, whose time belongs to the public.

THE EMPEROR OF THE FRENCH AND THE COTTON QUESTION.

AS Great Britain does not wholly monopolize the demand for cotton from America, and as France, Switzerland, Belgium, Germany, and Austria consume more or less of that article, and employ severally many thousands of persons in its manufacture, it is natural that in these countries, as well as in England, considerable anxiety should be felt as to the supply during the present and ensuing year. In consequence, no doubt, of this anxiety, a rumour has spread over various parts of the Continent, particularly on the German as well as on the French bank of the Rhine, that the Emperor of the French—the solver of so many political difficulties—will undertake to solve this social and commercial difficulty by breaking the blockade of New Orleans, Mobile, Charleston, and Savannah, and by formally recognizing the Southern Confederacy. It is urged in support of the rumour, that there is a deficient harvest in France, and that the Emperor is not in a position to sit quietly at Paris and allow the mills of Alsace, and other departments, which employ thousands of people, to be closed for want of the raw material, when he can so easily open up the cotton trade with the Southern States of the late American Union, and make Havre for a time the great cotton port of Europe, instead of Liverpool.

The rumour may possibly be without foundation, but its currency can scarcely fail to gratify the self-love of the French Sovereign, and the admirers of his hitherto unscrupulous and successful audacity. To feel that his will is the pivot on which not only the affairs of Continental Europe, but those of America, may be made to revolve; that upon his good pleasure depends, to a large extent, if not wholly, the temporal power of the Papacy; that the fortunes of the House of Hapsburg are, more or less, in his hands; that Italy courts and suspects, flatters and fears him, and watches his lightest movements with the most earnest solicitude; and that he can, if it so please him—for considerations either of power, or glory, or mere cotton,—determine the issues of the great struggle between the rival Republics of the New World, is certainly like Caesar:—

“To bestride the narrow world,
Like a Colossus, while we, petty men,
Walk under his huge legs.”

Independently, however, of many minor considerations which induce us to believe that the rumour, flattering as it may be to the Emperor's power, is without warrant or foundation,—there is one great and paramount reason which compels us to doubt its truth, which is, that by so doing the Emperor would incur all the risk and odium of a possible war with the Northern States of America, for a temporary advantage, of which a greater share would fall to England than to France.

Why should he do us so good a turn without getting anything by it? England, without making the slightest sacrifice of dignity or credit, would procure the cotton that will be so urgently needed in Lancashire during the ensuing winter and spring, *via* Havre, instead of *via* Liverpool; while preserving that strict neutrality in the war between North and South, to which she has hitherto adhered. Our excellent friend and ally would, in fact, get the chestnuts out of the fire for us—burning his own fingers, perhaps, but certainly not burning ours. And whatever might be thought of his conduct in New York, Washington, or Boston, there would be little, if any, dissatisfaction expressed or felt in Manchester or London, Mulhouse or Paris.

Whatever may be the truth or falsehood of the anticipation, it is certain that very strenuous efforts are now, and have for months past, been made by the emissaries and commissioners of President Davis to induce the Emperor to recognize the Confederate States; and that similar efforts have been made, and still continue to be made in London. There is no chance whatever that the Government of this country will take any step of the kind, for it would raise such a tempest of indignation throughout the country as to sweep away the Ministry. But in France the case is different. Neither the anti-slavery sentiment, nor the principle of non-intervention, nor a powerful public opinion, nor a free Parliament, are in the way to fetter the Emperor's action; and the hopes of the Southern emissaries are, for these reasons, fixed upon the Tuilleries and not upon Downing-street. They argue, too, that if France leads, the British Government may, in the interest of the Northern States, be compelled to follow, and to make use of the fact as an incentive to restore peace between the belligerents. Indeed, it is hard to say, whether, in the interests of humanity, and of the liberties of the people of the Northern and Western States, the formal and immediate recognition of the Southern Confederacy by all the powers of Europe would not be the best thing that could happen.

The North in such a case would see the inutility, if not the mad-

ness, of continuing a strife in which the interests of the whole civilized world would be arrayed against it; and would devote its energies to the consolidation of a somewhat smaller, but still far more powerful republic than that founded by Washington; and the South would be left to itself to do the best it could with its “peculiar institution,” and to learn in due time that slavery is not strength but weakness. Such considerations as these, will not, of course, weigh much in the mind of a potentate so selfish as the French Emperor; and if he do ultimately resolve to break the blockade and to recognize the Confederation, it will be because a scarcity of bread in France, and diminished employment for the people, are evils that, when they come simultaneously, are much too dangerous to the Imperial dynasty to be endured without a vigorous effort to alleviate or remove them. The displeasure of President Lincoln, and the enmity of the North, might not greatly affect his equanimity, but a starving people in the manufacturing districts of France, and wide-spread distress throughout the country during the coming winter, might imperil not alone a system but a dynasty.

INCREASING UNPOPULARITY OF TAXATION.

THE signs that the public begins to look with earnestness at our financial condition, and to be both uneasy and apprehensive, are not to be mistaken. Taxation raising, as Mr. Newmarch stated at the British Association, £90,000,000 a-year, including local imposts, from 29,000,000 people in a time of peace, naturally excites alarm. It causes no inconsiderable suffering, and suffering shows itself in numerous devices to get rid of it. Actuaries, economists, merchants, clergymen, all take up the subject, and one section of the Association was almost exclusively occupied with the means of making taxation less annoying. The suffering and the complaints will increase should the deterioration in the national prosperity which has begun to show itself continue and increase. The gush of enterprise caused by the removal of restrictions and by the gold discoveries, has carried us gaily through the lavish extravagance of the last seven years; but now this is stagnant, and there hangs over us, unrelieved by any sprightliness of speculation, the dull gloom of forced inactivity. In the Money-market the rate of discount is slack, and declining for want of enterprise. Week after week, and day after day, bullion is accumulating in the Bank. With that accumulation legal tender notes accumulate, so that the means of purchase, of buying and selling, is increasing, while business is declining. We do not venture to predict the rate to which discount will fall; but these circumstances indicate diminished activity and diminished income in the most numerous and most active class of income-tax payers.

In the corn market prices are rising, and wheat is only six shillings per quarter lower than last year at this time. Although our harvest has been well got in it is not so abundant as to make us expect excessive cheapness. The vast amount of our imports last year shows how much we depend on foreign countries. Of the quantity or quality of the harvest abroad we are not yet fully informed, but several circumstances will tend to impede the arrival of any large supplies from those quarters to which we have been accustomed to look for them. France is now a competitor with us for all that other countries can spare. She will probably need this year as large a quantity from abroad as she did in 1847. In Prussia the harvest is said not to be abundant. In the Baltic ports wheat is dearer than in England. In Russia the serf agitation has been unfavourable to cultivation. In America, even if the crops be good, still the civil contest must withdraw many hands from peaceful industry, and much less corn will come to market than last year. We must not calculate, therefore, on very cheap food as a compensation for a very greatly diminished foreign trade.

Of late a manifest tendency to an increase of the town population has prevailed in France. The policy of the government, and the whole course of its expenditure, has had the effect of withdrawing people from the cultivation of the soil, to form armies, to make railroads, to manufacture cotton and silk, to beautify the capital, and to lessen agricultural produce. A model farm or two, a facility of communication with unused districts, cannot have much, if any, influence at present, and we are not surprised to learn that the price of corn, already high in France, is rapidly rising. France, too, has come into our own corn market, and has imparted to it an unexpected firmness. France, therefore, is likely to experience a want of food which will seriously affect our supplies.

Unless some circumstance should bring on a foreign contest, we shall be obliged to look earnestly at home. Our paupers increased 5·14 per cent. in July last as compared with July, 1860. The increase in pauperism is sure to be augmented before the winter, from mills running short time and wages being reduced, every subsequent month adding to the difficulties of the classes who feel the burden of taxation. The public cannot take up the question of increasing expenditure with a view to check it too soon, and we infer from the proceedings of the Association that it is at least beginning to be alarmed.

In such a state of things it is worth while to reflect that, till

Parliament was reformed, the Government and the people were antagonistic, and there was always more or less of a struggle between them on the subject of increasing or lessening the expenditure. Since the Reform Bill, Government has become so completely identified with the middle classes, that they have laboured steadily to make it efficient. They have looked to it for many new services, and they have thought to obtain by its means many advantages. Formerly they were the impeding break, they have now become the hurrying locomotive. They have promoted and sanctioned augmented expenditure. Now they begin to complain. It is the income-tax which excites animosity. To the multitude who can only judge by comparison, tea, sugar, clothing, bread, spirits, &c., have all become cheap, or easily procurable, and the multitude as yet has neither felt distress nor murmured against taxation. Those, however, who complain of the income-tax, increase in numbers daily; and the tax which they find a grievous injury, may cease to be the useful instrument it has been, if discontent should, as seems not unlikely, create a general resolution to oppose, and should opposition be unsuccessful, at least to evade it.

If, on the one hand, the great change in our institutions has made the middle classes urge on a careless expenditure with a view to improve society, it has, on the other, very much improved their knowledge of the probable effects of that or any other course of political action. They have become practically familiar with all the operations and effects of Government, and have got completely within the preserve from which former generations were effectually excluded. No man, it is said, is a hero to his valet, and to Government all the middle and instructed classes have become valets. It is honoured by them now only for what it is worth. Over their convictions the annoyance of the income-tax has great influence. It lies at the bottom of the increasing unpopularity of Lord Palmerston's Government. It will make the assumption of office by his less popular opponents difficult and dangerous. It threatens the country with greater disasters than those to avoid which a large part of our increased expenditure is incurred, and the influential middle classes may perhaps now become rigid economists.

GARIBALDI AND FREMONT.

IT is not easy to understand the tactics, the policy, the blundering, or the fatuity—by whichever name we may choose to call it—which impelled the Government of President Lincoln to send a diplomatic agent from Brussels to Caprera, to invite General Garibaldi to lend his name, his talents, and his sword to the cause of the American Union. The blunder (to give it the mildest name) was a two edged weapon. With one edge it wounded, or was calculated to wound, to the quick, the pride of every general in the United States, and with the other it smote the patriotic character of the hero of Italy. The world may well ask if there are no soldiers or generals in the Northern States of America, no McClellan, no Banks, no Fremont, and hundreds of others, destined hereafter to warlike fame, and even now competent to lead to victory the armies of Federalism in this great crisis of American history, that the President should have sent all the way to Garibaldi's farm in search of a great but alien name to lend lustre to the armies which he himself, boatman, rail-splitter, lawyer, and civilian, is incompetent to lead? And, on the other hand, has Garibaldi fallen so low in the estimation of the Americans (amongst whom, in the days of his dignified adversity, he was content to earn his honest bread as a wine-merchant, a skipper, and a candle manufacturer), that his sword should be considered at the service of any one who may choose to hire it.

The one supposition insults the whole Federal army; the other supposition insults Garibaldi. Doubtless the President, whose honesty is great and unimpeachable, and only to be equalled by his incapacity, and who is one of those weak and well-meaning men who are the curses of a nation in the evil days when strength of will and tenacity of purpose are above all things needful in a ruler—intended neither harm nor disrespect, either to his own soldiers or to Garibaldi, in making the proposition; but it would have been a bad day for the President, for the Federal cause, for Italy, and for Garibaldi, if the latter had yielded to the temptation, and transferred his services from Italy that may shortly need them—or to America that ought to scorn either to ask, or to accept them. Garibaldi is stated to have refused the offer, on the plea of the state of his health. We shall rejoice to hear that his refusal stood on a nobler basis; and that had he been as strong in mind and body as his most devoted friends can wish, he would equally have refused, on the ground that he was not a soldier of fortune, not a free lance, not a Dalgetty, not a mercenary,—but a man of a high and noble purpose—an Italian above all things, and a true patriot, who scorned to sell his sword for wages, and who would rather be a private in the ranks for the liberation of Italy, than generalissimo under President Lincoln.

It is likely (unless the overtures made to Garibaldi by the United States Minister in Belgium were wholly unauthorized, which

we shall not be at all surprised to hear, though we shall, nevertheless, retain our own opinion upon the matter,) that the idea of calling in the Liberator of Sicily to aid in the disentanglement of American politics took possession of the White House immediately after the ignoble panic at Bull's Run. At that time it almost seemed as if the United States had no commander worthy of the name; as if General Scott, once a true war-lion, had been vanquished by the more than three-score years and ten that had showered their snows upon his venerable head; as if the voice of silly newspaper reporters (and how silly they are in America no Englishman can know unless he have resided in the States,) had overborne the calm judgment of all who really and thoroughly understood the business of war; and as if President Lincoln, in despair of finding an American general to help the Government in its emergency, had turned his eyes to the great soldier (who may or may not be a great General) of Europe to take the place which there was no American to fill. But since that time General Fremont has made a move. More than Garibaldi could have done he has done. He has issued a proclamation that is without exception the most important event in the whole history of the war, and that on which the greatest issues for good or for evil indubitably hang. He has declared that in Missouri, and in all the districts under his command, or to which his forces may penetrate, the slaves who are owned by rebels against the authority of the United States Government shall be manumitted, and made free.

Far better, we think, that such a decree should issue from the mouth of a Fremont—"native and to the manner born"—than from that of a Garibaldi. The result of this bold defiance to the slave-holding South remains to be seen. It must inevitably have its effect when such border states as Missouri (to which it is principally addressed) and Kentucky, that scarcely know, as yet, to which side to direct their force, but which evidently yearn towards the South with a strength that has little reason in it, but as irresistible a power as instinct or magnetism, shall give it their whole sympathy. Up to the present moment General Fremont seems to be the man who has got the key that may unlock the difficulty. We shall know, ere many days, whether the key be of any service.

THE QUEEN IN SCOTLAND.

THE very air of Braemar and Balmoral is pure and sweet enough to tempt any sovereign from his palace to the "braes o' Mar." It is soft and yet bracing; the spirits seem to rise with the barometer, and the traveller feels exhilarated, tempted as he is to believe at times that it must be laden with "the mountain dew," fresh from the distillery at Lochnagar. Nor is the water less beautiful, refreshing, and cool, whether it assumes the crystalline colour of the Dee or the cairn-gorm colour of the Gairn, the Clunie, and the Ey. If air and water be the two prime elements of life as well as of enjoyment, both are found among these Scottish mountains and glens in inexhaustible quantity and unrivalled purity. The hurricane that sweeps along the gorges, and the foaming cataracts that rush through the cloven rocks, render monotony of feeling impossible, and put weariness out of the question. Yet these rich enjoyments, to taste which the Sovereign travels six hundred miles, are as accessible to the humblest highlander as they are to the first lady of the land. The Prince Consort can say, "This property is mine," and the Chief of Invercauld can say, "That property is mine;" but the cream and flower of all—the magnificent and glorious scene—the eye of the poorest can take in, and the heart of the humblest can enjoy. The stones and hills can be put in title deeds; but the landscape cannot be so shut up,—it is the common property of all. The Queen of England may be seen galloping on a highland pony along the banks of the Dee, scarcely noticed by the tenantry on her estates. Every highlander believes he is born a gentleman. In his conduct in the presence of royalty he fully justifies his pretension. Instead of standing and staring in the exercise of a vulgar curiosity as the queen rides past, he uncovers his head and barely looks at the royal lady, or looks as if he looked not.

Those neat white cottages that cluster around the royal property have been built by the Queen. That beautiful schoolhouse has the same royal origin. That lady you may see any day paying a visit to the former, and hearing an examination in the latter, is the Queen of England. The exquisite lichens of endless variety that cover the birches and granite rocks are as expressive and eloquent proofs of the wisdom and presence of the Deity as the pines and birches that have waved in the hurricanes of a hundred years. Even so, those little acts of personal sympathy on the part of the Queen are richer evidences of her worth than the more imposing acts which history records, for in these the woman shines through the Queen, and the Christian glorifies both. Of all the views of Mar enjoyed by Her Majesty, not the least is the grand panorama which she annually witnesses from the summit of dark Lochnagar. We can from personal knowledge and experience bear witness to the area of mountain glen and river which the eye sweeps over from this noble hill-top. Standing on the loftiest crag of the mountain, the Queen sees a hundred mountains apparently doing her homage and recognizing her sovereignty on her mountain throne; the golden eagle still sails past or builds her eyrie amid the storms, and herds of red deer may be seen yet fearless of man in their own retreats. About the end of August and beginning of September the heather attains its loveliest bloom; toward the

middle of the latter month it fades into a brown colour not much less pleasing to the eye of the artist. The mountains look more sombre, but the lights and shadows still remain.

But in our present paper it is rather our design to refer to the natural history of the district that surrounds Balmoral. Beginning with its geology, the granite is the almost universal formation. The granite of Aberdeen however, is vastly superior in beauty to that in Braemar, for the felspar predominates in the latter very much over the quartz and mica. The quartz is frequently found in the form and shape of "cairn gorm" stones of various shades, of great beauty and considerable market value. These stones are the ornaments invariably used in different parts of the Highland dress, and in brooches, bracelets, &c. They derive their distinctive name from the mountain on which they are most commonly found. Glen Ey is composed of slaty rocks of the mica and bouldered type. The mountains composed of the primary rocks are usually round and broad, and desolate and bare, with intersecting fissures and corries, down which the waters rush and awaken ceaseless music. The granite, no doubt, was upheaved by some subterranean force bursting through the floor of slate and standing up in the form of the vast mountain-heights, which give character, sublimity, and beauty to Deeside.

The botany of a district is very much determined by its geology. "Some of our rarest Alpine flowering plants grow luxuriantly by the streams, which thunder down the corries," observes the Rev. James Crombie, in his valuable and indispensable volume on Braemar; "and on the wet shelving ledges of their precipitous cliffs, while the blocks which strew their sides are covered with many beautiful lichens, and the barren moors, up even in close proximity to the snow, are productive of some species of mosses of the freshest green and most delicate structure. The corries and crags, the streams and ravines, are, for the most part, clothed with a rich and varied vegetation which, for the number and variety of its species, is scarcely surpassed in Scotland." The flowering plants and ferns which flower in July and August are found among the Lochnagar and Cairngorm mountains, at an elevation of 3,000 and even 4,000 feet. Among these may be mentioned the Alpine meadow rue, the Alpine mouse-ear chickweeds, the tufted Alpine saxifrage. The trailing azalea is found among the peat and rocks. Great varieties of willow are found in the corries. Ferns of all varieties occur in the district—some at an elevation of 3,000 feet. Nearly 300 varieties of mosses, some peculiar to these regions, are common on these hills. The snowy andrea, the owl-leaved earth moss, the slender beardless moss, the tall fork moss, the varieties of thread moss, apple moss, collar moss, and feather moss, are a few of the exquisite mosses which grow in full beauty beneath the showers and the sunshine that fall on these mountain mosses of granite. The lichens of Mar are varied, beautiful, and numerous. The tree hair and the Iceland moss are found here—the latter abundant on Ben-nabour and Cairntoul. The fresh water *algæ* are not very abundant, because, as Mr. Crombie remarks, "the waters of the streams are too rapid, and those of the lochs far too clear."

The zoology of Balmoral and Braemar is interesting. The red deer gives these mountains their deepest interest in the minds of many. A herd of deer, consisting of some hundreds, with their branching antlers and vast speed, and sensitive timidity, presents a superb sight. Notwithstanding the great number overtaken every autumn by the leaden bullet, the forests of Mar still abound with royal stags and roe-deer for future deer-stalkers. The Prince Consort is an enthusiast in the sport, and is said to be no unskilful shot. The walls of the palace are covered with deer-heads, the trophies of his success, while appended to each is a label announcing the day and place at which the monarch of the glen was struck down. The golden eagle still spreads his wings on the wild winds that beat on the summit of Lochnagar and Cairngorm. War has long been waged against this noble bird, and no doubt in a few years the race will be extinct. We once saw two of these eagles rise from a rock on the highest point of Lochnagar. Nothing could surpass their disdainful and defiant look as they rose on their wings, measuring eight or nine feet from tip to tip. They seemed to have a sense of royalty and superiority to danger or attack, which must have been somewhat diminished since the introduction of the Enfield rifle. We have said enough to interest our readers in this romantic and magnificent district, and to prove the good taste of the royal family in making choice of it for a highland home.

For a very valuable and instructive companion in visiting the various interesting and historic scenes of this district, as well as accurate description of the natural history of the country, we refer our readers to a volume from the pen of the Rev. Mr. Crombie, the clergyman of the district, who has found time in the long winter evenings to compose the best, most instructive, and intelligent record of all that calls for notice and deserves investigation.

MODERN READING-BOOKS.

It is a common saying that "a bad workman finds fault with his tools," and there can be no question that the maxim is well applied when conveying a rebuke to self-excusing bunglers. But it is equally true that if you give a man a certain work to be done in a limited time, you must allow him the requisite appliances of his craft; and if you insist on his working with old-fashioned, broken, or otherwise insufficient instruments, his work must either take more time or lack finish. This is pre-eminently the case in the great work of popular education. The employer, a parish, aided and guided by Government, puts into the hands of its workman, the certificated schoolmaster, an amount of raw material, say twenty boys. Out of this material

the workman is expected to produce a certain quantity of the manufactured article,—a certain number of intelligent and useful citizens. The process by which he has been trained to do this, and which authorities hold to be the best at present known, consists in causing these twenty boys to become acquainted with a small amount of religious knowledge, and to be able to read, write, and cypher intelligently. He is expected to manufacture the requisite article by means of the above process in the very shortest possible space of time,—a space, indeed, so short that many high authorities have declared it to be absurdly inadequate. He considers himself fortunate if he gets 176 days' work per annum at this very rough stuff for about six years. Assuredly, with all these disadvantages; with such intractable material; with such a long, tedious, and difficult method of manipulation; and with such very limited time, he may reasonably demand not merely that he shall be fairly supplied with the requisite tools and appliances of his craft, but rather that he shall have abundance of them, and that they shall be of the best and newest kind, so that not an hour may be wasted either by his being compelled to search for an instrument that will effect a particular purpose, or to use for that purpose one not thereto specially adapted.

The tools with which the parish, under the direction of Government, supplies him, are books, blackboards, and the other modern appurtenances of a well-managed national school. All these have, no doubt, been immensely improved of late years. Thought, experience, and invention have so met together and combined for the welfare of our little plebeians, that the sight of a modern elementary school, with its excellent classification, its cleanliness, comfort, and cheerfulness, would astonish a Dominie of the last century, could he visit to-day a well-ordered English village. But there is still much to be done. The schoolmaster's tool-box is better supplied than it was; but some of his tools are still dreadfully clumsy, and fashioned on a complete misunderstanding of the craft. This is especially the case with certain instruments requisite for that part of the humanizing process called "teaching to read." Folks used once to think that this was the easiest part of education; but they are now, with more reason, inclining to consider it the most difficult, especially in the case of children of the lower classes. The children of the upper and middle classes are prepared for the process of learning to read by an unconscious method,—the association with their parents and with strangers from their veriest infancy. From the cradle they are being moulded and shaped into the requisite form for clear and intelligent articulation and expression. When the time comes for them to use a book, they receive from a nurse or mother the most careful individual attention, which is never relaxed until they have passed through the narrow gates of spelling and syllables into the immense domain of knowledge and enjoyment which lies open to the rich man's child who can "read to himself." With the poor man's child the case is quite different. Home influence, so far from helping indirectly his schooling, is directly antagonistic to it. Association with his parents and their friends is actually destructive of the schoolmaster's work. Nor does he ever in his life receive that individual attention and care which are found so effective in the case of the rich man's child before the age of docility is passed and that of emulation has arrived. How immensely important is it, then, that the parish schoolmaster should work while he can with the best and most trenchant instruments.

One would expect to find an English elementary reading-book a thoroughly satisfactory article, based on the best principles and constructed with the utmost care. We should expect to find in our schoolmasters' hands, not a book which studiously avoided introducing Saxon words, but one which was written with a due admixture of that nervous and manly element in our language; one that contained, not a series of caustic apophthegms and miscellaneous fragments chosen for the jaw-breaking polysyllables they contain, but an interesting narrative, written in a direct, straight-forward style, so as to engage the attention and sympathies of the little readers. Unhappily our existing reading-books appear to be framed in utter ignorance or disregard of these dictates of common sense. The most favourable specimens of them are perhaps those by Dr. McCulloch, recommended to managers of schools by the Committee of Council on Education; and as a "new and greatly improved edition" of these books has just been published, it is worth while to consider whether they proceed on a right principle or are based upon a fundamental error in method. The advertisement states that "these books are intended for the use of schools where the general mental culture of the pupil, as well as his proficiency in the art of reading, is studiously and systematically aimed at." It will be obvious that there can be very few schools to which this description will not apply. We should not have much difficulty in characterizing a school where "the general mental culture of the pupil" is not "aimed at." The definition undoubtedly includes National Schools, to which, in fact, the books are recommended by Government; while they are also distributed by the publishers to Inspectors for the sake of their recommendation. Yet underneath this specious advertisement lurks a fallacy most hurtful to the cause of education. This fallacy lies in the supposition that the master ought to combine, simultaneously with "teaching to read," teaching a smattering of every science under the sun, thus making the learning to read well a mere sidework.

"The Course of Reading," for example, one of the most carefully compiled of Dr. McCulloch's books, treats, like an ancient sophist or a modern social-science orator, "de omni re scibili et quibusdam aliis." The child who, being somewhat advanced beyond the weak and beggarly elements of the first two or three lesson books, is put on to read in this elaborate hodgepodge, finds

himself rehearsing aloud to his yawning schoolfellows such captivating subjects as "The Phasis of Matter;" "The Physical Forces, Cohesion, Gravitation, and Chemical Affinity;" "The Laws of Elementary Combination;" "Prophecy;" "Vaporization;" "The Chemical Power of Light;" "The Vastness of the Universe;" "The Negro Race;" "Man's Intellect before the Fall;" "The British Constitution;" "The Daily Revolution of the Celestial Sphere," and the like. The stranger who enters an elementary school at the hour when the first class is reading, will see a child of ten or eleven years standing in the midst of his companions, and informing them that "the great and beneficial influence which the sunbeam, by means of its three agencies of light, heat, and actinism, exerts on the phenomena of nature, must be manifest to every observer. Vegetable organization is especially dependent on the influence of light. The *etiolation* of celery and sea-kale are familiar instances of the complete check which is put to the formation of colouring matter when light is obstructed," &c. If not overwhelmed on hearing this with the novelty of the information, the stranger may, perhaps, be struck with that of the grammar in the above sentence. Or his ears may be saluted by the following jargon,—"The Palæozoic group, which is supposed to be next in age to the metamorphic, comprises the silurian rocks, the old red sandstone, and the coal-measures. Here the crystalline texture characteristic of the previous rocks disappears, and a stratified texture takes its place, showing the operation, not of igneous, but of aqueous influences;" with plenty more of what Dr. McCulloch calls "this interesting and agreeable reading," which is "not intended to store the pupil's mind with facts, but to create in him a taste and relish for further study." Would not a peasant who, in maturer years, manifested a "relish for the further study" of the "Phasis of Matter," be charitably transferred to the nearest lunatic asylum? It is hard to believe that even Dr. McCulloch himself can manifest very much relish for his precious compilation.

The book is, moreover, furnished with a set of illustrative diagrams, quite unimpeachable in their way, and necessary, no doubt, to the proper understanding of the abstruse subjects which they explain. They require, and perhaps repay, careful study; and would be useful in a popular journal of science; but the very need for them here shows how ill-fitted for a reading-lesson is the subject matter which requires such close application. A boy may read this book after the fashion of a well-trained parrot, or as a parish clerk repeats the Athanasian Creed, or he may study it in quiet; but it is so framed that he may be defied to read it with the voice and with the understanding also. Yet the above are fair specimens taken at random from the "Course of Reading,"—itself a favourable type of the modern first-class reading-book. Does such a work as this deserve the name of a reading-book? It is a scientific compilation, a literary scrap-book, an imperfect Encyclopædia if you like—anything but a reading-book.

Such a work written in manuscript, half-bound in morocco, and reposing in a boudoir between a jar of flowers and a pincushion, would be set down as a very respectable common-place book, creditable to the laborious efforts of some young lady in her teens, and a guarantee that she was "accomplished." When will educationalists learn that teaching to read is a process by itself, of too much importance to be combined with dabbings in geology or chemistry? When will they make it worth a publisher's while to produce the splendid narratives of John Bunyan or Daniel Defoe in a cheap form? When shall we hear the grand old English of such masters as these falling with its sterling Saxon ring from the *ora rotunda* of our little peasants? Happily one of the best works of one of these writers, the immortal "Robinson Crusoe," is now published at a price which renders it accessible to parish schools, and has been introduced into more than one English village, with the very best results to the reading and dictation of the scholars, and to the infinite relief of both teachers and taught. These are the books required for first-class readers in our elementary schools; and we hope before long to see more of them published and adopted.

THE WIZARD OF THE NORTH.

THE above heading will probably suggest to the majority of our readers a person very unlike him whom we mean it really to represent. The magician of the period is usually a sallow gentleman with a small moustache, and a foreign accent; whose speciality is either to transform everything into something different, or else, having torn and smashed everything into shreds and pieces, to hand it over to the astonished owner in its original entirety. His costume will consist either of the white neck-cloth and black overalls of polite life, or of the brocaded dressing gown and extinguisher head-dress, which are supposed to be particularly convenient for the production of supernatural results. Our Wizard is quite another man. [He is of the sturdy old English build; his face is round, and his moustache is wanting. But there is keenness in his eye; and though not much less than seventy winters have passed over his head, his vigour, so say his familiar spirits, is not all expended. He neither transforms nor reforms; at least in the usual sense of the words. He works on materials far more subject to disturbing influences than are hats and pocket-handkerchiefs, or even chronometers and five pound notes. Among an audience singularly wide-awake, and actuated by the strongest possible motives for detecting and frustrating his intentions, he has more than once succeeded in transferring hundreds of thousands of sovereigns from one set of pockets to another. His name is John Scott; and he trains race-horses.

A few days since, and upon the eve of one of his great annual exhibitions, the Doncaster meeting, we thought we could not do better than visit his retreat. Unlike other conjurors, he is by no means unwilling to allow the curious a peep at the agents by which he proposes to work his miracles, or at the system which regulates their preparation. Indeed, his general system is pretty well known, and differs not much from that of others. It is in the skill with which he modifies its application, that his true pre-eminence lies. Of course, we cannot be expected to be able to retail the secrets of his experience, even if there be any to retail. We can only narrate what we saw, and that, we fear, not from a very "horsey" point of view.

The training-ground of the Northern Wizard is at Langton Wold, distant about sixteen miles from York city. The Joneses, Browns, and Robinsons of the period will probably form their idea of the place of practice of wizards in general from stray recollections of the incantation scene in the "Freischütz." Their conception will not be realized on personal inspection of Langton Wold. Precipitous rocks and blasted stumps, owls, bats, crocodiles, and skeletons are there by no means *le rigueur*. We have discovered no trace of a magic circle; and we much question if either groom or yokel would answer to the name of Zamiel. The actual impression made upon the observer will depend very much upon the weather. He may, indeed, be at first but ill-disposed to appreciate beauties, on account of the very provoking slowness of the fly, which will have conveyed him thither from the Malton station over a road not singularly heavy, and up a hill not invariably steep. Perhaps the press of visitors to so world-renowned a spot may necessitate some husbanding of the powers of the local cab-horses.

However this may be, the traveller, upon his arrival at the summit of the incline, finds himself on a grassy table-land, some miles in circumference, with here and there a white curve of rails, marking the line of the Malton race-course. The only buildings visible are a gaunt-looking grand-stand, with the usual balcony in the middle, and flights of seats on the roof; and a shed or two. A solitary clump of trees does not tend to enliven the general look of the place. But if it be fine, to the right, to the left, and in front of him, his eye will look down over a vast undulating sweep of arable and pasture land, which, as the waves of shadow pass over its sunny surface, will give him a fair idea of the richer parts of one of the most beautiful counties in England. If, on the contrary, the clouds, as is not unfrequently the case, be gathering up for rain, he will have a notion that he has got to the world's end, and is likely to tumble over the edge. The hollow between him and the amphitheatre of hills will be steaming with mists; and the violence of the wind will make him think that it would be as well if he moored himself to the rails with a good stout rope.

Altogether it is a bleak, exposed spot enough, but well adapted both by nature and art to the purposes of the Wizard. Quadrupeds, as much as bipeds, are susceptible of the bracing effects of a healthy breeze; while the celebrated "tan gallop" diminishes as much as possible the great danger of a break down in the legs of the trainee. The training of a race horse is much the same as that of a man. First, physic to clear the system; next, gentle, and by degrees more vigorous exercise, diversified by occasional sweats in clothing, the object of which is to get rid of unnecessary flesh, so that the animal may not run under heavier encumbrances than those prescribed to him by his engagement. If the spectator arrive at the Wold at the proper time, say by ten a.m., or half-past, he will see these operations, barring the physicking, in full swing. In Indian file the *élite* of English stables sweep past, steadied in their stride by tiny boys, whose pipe-stem legs seem as ill fitted to stick to the pig-skin as their arms to hold the gallant brutes, whose masters they nevertheless are. Onward they go, the most experienced of the lot leading the gallop; while, not far off, the Wizard himself, from the recesses of his brougham, measures improvement and estimates chances of success. On another side what is called the "lunging" of yearlings is going on. A lad, armed with a hunting whip, has hold of a rein of some four yards in length, the other end of which is attached to the head of his pupil. The latter is kept circling round by a crack of the whip, and the occasional utterance of some of those short clucking sounds which stable-boys utter and horses understand. This is the earliest process of breaking in.

There are other scenes, however, enacted from time to time which will hardly be seen by ordinary mortals. It is whispered that there are nooks and corners on that extensive plateau, where, at undue hours, perhaps amidst the mists that precede sunrise, or the shades that accompany nightfall, a vision of two or three horses will flash by at more than equine speed. Are they spectres appropriate to the place? Is Langton Wold a second Brocken? Can it be the Wild Huntsman of the Black Forest, who has given up riding 'cross country, and taken to flat racing in the West Riding? Or is it a double of our own Flying Dutchman, who is imitating the eccentricities of his naval namesake? If we could see the finish of that mysterious contest, we should possibly discern an unmounted figure or two, of very mortal seeming, examining weights and comparing stop-watches. Guessing from this hint, we might not be wrong in concluding that we had unawares been witnesses of an event which, if it occur before an important meeting, may be fraught with as much interest to England at large as the announcement of an European war, or an additional penny to the income tax. It may, in short, have been one of John Scott's private trials, in which, by pitting the horse which is to be tested against one whose abilities are already known, and duly adapting the weights carried, he can gauge to a nicety the chances of the former. Possibly, a few minutes after the result of the trial is known

to the Wizard (and it is only to him that it is known, for he keeps to himself the exact weights), his familiars in London receive electric orders to "put on" this one, £500; on that one, £100; and so on. The duties are divided, because simultaneous action would at once frighten the layers of odds, and consequently diminish the profits of the taker. But by night, if a large sum have been invested, even by different commissioners, and at places as far distant as London and Manchester, the fact will be generally known; and the betting-ring, instead of considering that there are, say fifty chances to one against the horse, will be loth to back their bad opinion of him by entering bets described by a far smaller ratio. The arrival of the morning paper, and the list of the odds current at Tattersall's, will be the first announcement to the good people at Malton of a change, caused by an event which took place under their very noses some twenty-four hours before.

The snug, white-washed, road-side house, with brilliant flower-beds on the one side, and extensive stables on the other, is quite as different from what a well regulated wizard's retreat should be, as are the breezy heights of Langton Wold from the rocky defiles of the German Opera. Fancy a wizard that delights in flowers; and, still more, fancy a wizard that gives a stranger a superlative glass of beer. Having applied to the Wizard's head familiar in the book-keeping line, and been hospitably ushered into the Wizard's parlour, while the head familiar in the horse-keeping line is being communicated with, to us enters the Wizard himself. It will be enough to say, that he is extremely courteous. Our wish to see his "lot" is at once mentioned and assented to, and the glass of beer proffered and accepted. Then commences a survey of the score or so of paintings of race-horses which adorn the walls. There are Derby winners, Oaks winners, and Leger winners, mounted by many-coloured jocks, and either tearing past imaginary winning-posts, or preparing for imaginary starts, or returning to imaginary scales; all of them agents of the Wizard's triumphs, and illustrations of his potent arts. But there are testimonials more substantial than pictures to recall his successes. On one table stands the magnificent Warwick Cup, just brought northwards by one of the Wizard's most celebrated horses. Racing trophies of all sorts, vases of silver, and vases of silver gilt, almost cover the side-board. A gigantic teapot, token of the gratitude of some aristocratic client; and a carving knife and fork, the handles made of the split legbones of some steed who is gone where the good horses go, is just catching our eye, when we are interrupted by the appearance of familiar No. 2, and his summons to the stables.

As the gates of the stable-yard open, and we find ourselves at the bottom of a longish narrow yard, with doors on each side, we cannot prevent a slight feeling of awe from stealing over us. Here we are, think we, in the very *sanctum sanctorum*. Here, in the unrestrained confidence of private life, we shall meet and possibly pat those equine heroes, the very breath of whose nostrils is wealth or ruin to thousands, and whose slightest slip would be more universally deplored than the *faux pas* of innumerable duchesses. Painted on the stable doors, and framed in the gilded plates of old horse-shoes, are the portraits of their high-born ancestors. Below are lists of their performances, in letters also of gold, and with date and place complete. This does not reassure us. It is only when we find ourselves actually in the company of the heroes in question that we begin to realize the truth of the adage that no one is a hero to his valet. Familiar No. 2, who fills in reality this last responsible position, has a dry, matter-of-fact way of introducing his equine masters that is very repressive both of shyness and enthusiasm. "This is a horse called so and so; he is by so and so, out of so and so; he is a two-year old, and in the Champagne Stakes at Doncaster"—is a description, which, more or less, puts one at ease with its subject. Only thrice was this or a similar formula altered or exceeded. "This is a horse called Brown Stout; he is in the Leger," provokes an "Oh! so this is Brown Stout, is it?" on our part. (We have just seen in the *Times* that Brown Stout has suddenly risen from "fifty to one, offered," to "seven to one, taken freely," as it is supposed, in consequence of his having been very favourably tried on the Wold.) "Yes, this is Brown Stout. He is a very good horse, and he'll take a deal o' beating," is the only rejoinder, as he leads us on to other candidates for presentation.

The Wizard—not the trainer, but the horse—elicits the opinion that "he is about the best and unluckiest horse of his year, let alone having the power of making more honest fat than any other;" while the Knight of St. Patrick is described as "the rummest he ever did see in all his life; he has run in ten races and five trials this season, is an out-and-out roarer, and never ails nothing." In this way we make acquaintance with some fifty horses, about all that are at present in training under the Wizard's care; and we need not say that we depart well pleased with our new friends.

A word about the stables. They are distinguished by none of the dandyism which characterizes those of modern stable-fanciers. We see no brass mountings, no enamel, and no varnished wainscoting; but they are perfectly well ventilated above and below, and most scrupulously clean. Without much practical experience, we may draw our own conclusions as to the necessity of the above-mentioned adornments.

UGLY RUSHES.

THERE is one result of the growth of our cities, and the increased population of the rural districts, for which the returns of the Registrar-General have not yet a ruled column. Perhaps it could not be accurately stated in per-centages, though the effect is too often and too distinctly visible. We

shall soon be compelled to calculate what is the rate of danger incurred by tempting the "public" to gather itself together in masses too great, in a space too small, at any one time. The interest of this great body, the public, is sometimes difficult to excite; it is occasionally blind to the broadest placards, and deaf to the loudest puffing. But let that interest be created widely, and then directed or focussed on one place or one man, and the consequence is what Mr. Henley called an "ugly rush," to see what everybody must see, and hear what everybody must hear. That "rush" consists of numbers that are unmanageable by any present means of conveyance, and that cannot be contained in any public place built before the age of "great cities" and provincial towns, that anywhere but in England would be great cities themselves.

In fact, compared with other nations, the whole surface of England is approaching the condition of one vast township. The inhabited centres are greater in size, vaster in population, and by steam are brought closer together. It is a natural growth; it is attended by considerable advantages; but it is also not without some inconveniences, that are occasionally intensified into perils. Some of our "hives" are so thickly tenanted that it is absolutely dangerous to draw the dwellers in them to swarm too numerously on one spot. They gather there gradually, through several hours of the day; but they all feel the desire or necessity of returning to the centre about the same time, and then comes the "ugly rush" for places in the steamer or train, and the day's pleasure ends in a mob, a crush, and a struggle, in which, we regret to say, we have seen men become brutal, and women faint with terror, the harmony of the morning going off in a running bass of oaths and a shrill treble of screams. For an illustration, see the platform of the Crystal Palace station, from six to nine, on the evenings of the days of "unusual attraction." There ensues a frequent howl of complaint against the directors, managers, and the railway people generally; but the discomfort of the "ugly rush" is not to be wholly imputed to them. The pressure is beyond anything their arrangements can meet; if the public will go in such thousands, some part of the number must be defeated in that battle between them and time with which such holidays inevitably conclude.

It is this pressure of numbers that makes one of the great perils of "excursion trains," and the danger is not likely to be lessened by a disaster now and then; but it may be abated by the growth of a conviction that such "excursions," under their present conditions, are rather the reverse of what can rationally be called "pleasure." The "rush" to the station, and the close packing that ensues, are enough to take out of the system a good deal of the freshness essential to the enjoyment of a day's pleasure. Then the still worse rush, and the yet closer packing of the return, coming after the fatigue of the hours of amusement, which have been naturally made the most of, must send the excursionists to their homes conscious of more misery of mind and body than they could possibly have bought for their half a crown within a twelve miles' distance round London. Both less and more is required for a real day's pleasure than our somewhat unreflecting excursionists seem to consider. It is more leisure, that is time, and a smaller distance to traverse before the holiday commences; the most inveterate lover of excursions will hardly contend that the journey, made in the manner of cattle in their pens, is a thing to enjoy.

Too much of a day's holiday thus spent is wasted in a mere conquest over space. We are convinced that the working classes would derive more real enjoyment from excursions of one-fifth the distance, than they do now from the rushes across half the breadth of the island, to which they are tempted by low fares. All things considered, the bargain is not so good as it seems for the purchasers. If the passenger traffic of the country were conducted on a different and, we are disposed to believe, a sounder system of prices, these monster excursion trains would not be so necessary to the revenue of the lines, nor so tempting to the poorer classes. The present system appears to be based on the principle of compensating for a high scale of fares, that discourages travelling on ordinary days, by periodical debauches of cheapness, that tempt thousands on to the road, and convert our excursions into "ugly rushes," in the full sense of the term.

Could not the passage from point to point, whether for business or pleasure, be spread more equally over the days of the week and the months of the year? If it pays to carry one great bale of humanity to Brighton and back for half a crown on Sundays, would it not pay to carry it on any other day for three and sixpence, and thus invite passengers regularly? "Eight hours by the sea-side" would not then be such a rarity to those who have but little to spare for travelling. Now they are repelled for six days of the week, and tempted on the seventh, under the name of pleasure, to overcrowd the third-class "slaughter-boxes" of an excursion train. The traffic on the "pleasure" lines now alternates between a comparatively dribbling stream and a dangerous torrent. Let it flow more equally, it could then be controlled and managed safely; at present the railway companies and the public act and react on each other with the result of turning safety into peril, and what ought to be pleasure into disaster, mourning, and woe!

But there are other "ugly rushes" besides those on Sundays to the Ocean. Either the curiosity of the public to see its great men is more intense than formerly, or greater numbers are moved by the sentiment. That was a very "ugly rush" which met Mr. Spurgeon at Bristol, and because a chapel would not hold more after it was full, battered the doors and windows with brick-bats, and marred the devotion of the meeting. The popular preacher may have felt flattered by such a proof of his fame; but he was also very much

frightened; the zeal of the outsiders expressed itself in a manner so threatening to the peace, that the aid of the police had to be called in to repress it. It is singular that an excluded crowd will never believe that a steamer, a train, a chapel, or a theatre, may be full, and can hold no more.

The disproportion of numbers to space creates the "ugly rush;" that is, generally, a very senseless proceeding. A repetition of this stupid violence was produced by the pressure to see Blondin at Birmingham. Riot, destruction of property, and the bludgeons of the police, were in the train of the acrobat, as in that of the preacher. Eminence of any kind, great enough to draw many thousands together, is dangerous to its admirers. It would be a great gain if the public could be induced to take its pleasure and indulge its curiosity in a less gregarious manner; for masses of people, equal to a large army, carry peril with them into every successive train; and the "ugly rush" of an ill-tempered mob results in a congregation no minister—though equal to ten sermons a week—can edify.

HARVESTS, AND HARVEST HOMES.

THE last yellow sheaves have been gathered into the barn, and the brown fields ring no more with the reapers' jocund mirth, nor the green lanes with the merry voices of the returning gleaners; but in many an ancient farmstead there are sounds of rejoicing and festivity issuing from the gladdened souls who are busily engaged in the due celebration of the "Harvest Home." And why not? From the early Biblical times, when, with a touch of perhaps involuntary pathos, as contrasting the poor widow's sorrow with the universal joy which reigned around her, we are told how the sons of Rizpah were "put to death in the days of harvest;" from the dim ages of Teutonic tradition, and from the later rude periods of the Saxons and Normans, up to the present day, the close of the harvest has ever been a season marked by all the principal features of rural merry-making and rustic jollity. Nor are the agricultural districts, as contrasted with the busy scenes of manufacturing industry, the sole divisions of the kingdom which are concerned in the prosperity of our cereal crops, for, if we but reflect on the vast difference which a few days of bright unclouded sunshine, or of dull, gloomy, rainy weather, may occasion not only in the cheapness of food, but in the peace and internal tranquillity of both this and other nations, we shall see at once that rich and poor, employer and employed, townsman and countryman, have all alike one and the same interest at stake as regards the weather. There is no revolutionary element so much to be dreaded as the occurrence of a bad harvest; and had such been the case in this country our Noble Premier would have had something else on his hands besides participating in Cinque Ports pageants. No marvel, then, that the recent continued period of favourable weather, which has enabled the farmers to secure their grain in good condition, has also lent additional *éclat* to the numberless harvest rejoicings, with accounts of which the provincial papers are filled. But these festivals are very unlike those of olden time, or even of a more recent date, such as "The Horkey," celebrated in verse by Robert Bloomfield; for old customs are gradually dying out, or being replaced by new ones. But a few yet linger in those districts the more remote from the utilitarian influence of our towns; and in several parts of the midland counties scenes still take place which appear like transcripts from the poetry of Thomson, or poor John Clare.

For instance, at mid-harvest, in many villages, it is customary for the reapers of each farmer to make a collection of money from their master's tradesmen and others, and to spend the same in a Saturday evening's drinking bout. This is termed "largesse," perhaps from a shadowy tradition of the herald's cry at the gay tilting lists of the once famous Ashby-de-la-Zouch. This additional festivity is, however, far from universal, and the real harvest-home commences when the last golden sheaves are loaded on the cumbrous waggon. Then the head man proceeds to the farm to demand what is quaintly termed "the hollowing bottle," that is, an extra allowance of ale in the labourer's wooden keg, to enable him to shout more lustily, as the wain proceeds homewards, the old rhyme of—

"Harvest home! harvest home!
Three plum-puddings, and I'll have one!"

The load is sometimes, but not so often as formerly, decked with green boughs; and upon the top, holding on to the ropes, and lying down at full length, are two or three white-headed, sun-browned urchins, shouting with all their might their poetical anticipations of the national dish. Perhaps by this time it is seven o'clock in the evening, and the farmer's yard presents an unusual aspect of bustle and confusion. Here are stout, rosy-faced servant-girls hurrying to or from the barn or out-house where the feast is to be held; there the farmer's wife is calling on the cook to make haste with the eatables; while here the stout, jolly-looking Melibœus himself is superintending the transit of the flagons of "old October" which are to be consumed during the evening. At length, there is a general rush to the barn, and the tables are soon surrounded by an hungry crowd of labourers, reapers, servant-girls, and others, all waiting to do justice to the mighty joints of beef and mutton which are placed before them, not forgetting the enormous smoking puddings, the intense solidity of which would cause, by sight alone, an internal shudder to a dyspeptic patient; not so, however, to the parties concerned, for the repeated applications of the plough-lads to the over-tasked carvers would astonish those who have not actually witnessed their wonderful performances at a village school feast.

After supper the serious business of the evening begins. It is a curious sight to behold the rustic etiquette relative to the first song, and the West-end coyness with which some six-foot giant will simper forth his excuses and reasons for not singing. Gradually, however, he is prevailed upon, and after many preliminaries in what he is pleased to call "pitching the key," he commences some such ditty as—

"When first I went a-waggoning, a-waggoning did go,
I filled my parent's heart with sorrow, grief, and woe,
Sing wo, boys; wo, heigho-o-o."

—And so the ice is broken.

The singer of the first song has the right to name his successor, and a strange *mélange* of coarseness and sentiment, of the beautiful and the grotesque, do these compositions betray. First, some silver-haired octogenarian will pipe out, with shrill treble voice, a long-forgotten song rife during the Peninsular war; and after him will come a gigantic, brawny-limbed plough-boy, wearing a 5 lb. quarter-boot upon each foot, who hallooed forth a mellifluous lament upon the "falseness of his darling love," and the certainty of his "own death thereby;" but casting all the while something more than a sheep's eye on the ripe vermilion cheeks of the damsel who sits beside him, and who, in her turn, will shrilly announce to the sympathising audience her experience of "the treachery of mankind," but the appropriateness of which is marred by her continual expostulations of "Ha' done, John; what a great silly you are!" to the amorous ploughboy before mentioned. Thus run on the hours, showing, on the part of the rustics, an unintentional caricature of the routine observable in polite society—the butt of the company as unmercifully quizzed—the hero as invariably exalted—the same jealousies, the same lovmaking, and the same rivalries and interferences as in Tyburnia or Belgravia; although, perhaps, those fashionable neighbourhoods never knew, and possibly never will know, anything like the intensity of the enjoyment which pervades the yearly celebration of the ancient festival. The worst feature in this, and, indeed, in all other English merry-makings, is the *excess*—the vast degree of brute drunkenness, of clownish debauchery, in which these revels so frequently and so unfortunately terminate; and yet no observant spirit who has looked upon the habitually saddened and depressed expression of feature which these hard-worked children of labour generally wear, would wish their holidays less frequent, or their opportunities of enjoyment curtailed. It was the earnest desire of giving a somewhat less boisterous and more elevated and Christian tone to these festivities, and with a wish that the wives and children of the labourers should be enabled to participate in their enjoyments, that what is now called "The Harvest Festival" originated. Doubtless, in some cases, its advocates do what is termed in country phraseology, "Ride a good horse to death," bringing in "by the head and shoulders" their own particular crotchets—interfering and directing—scolding, blaming, and patronizing—until the whole affair becomes a *fête*, less the labourers' than their own; but in others a more commendable spirit is shown, and a decided advance in temperance and morality attained, whilst the social enjoyment of the participants in the festival is not lessened, but increased.

One clergyman in the midland counties originated a harvest festival in his own district, and carried it out on unexceptionable principles. After due consideration and consultation with his parishioners, he prevailed upon the farmers to contribute severally the exact sum which the supper to his labourers cost him, neither more nor less; and with this money he devised, and has since carried out, the following arrangement, to the satisfaction of all. On a certain day, after the harvest of that parish was garnered, they commence with Divine service and a short address upon the subject, thence they adjourn to a field in which two tents are pitched, one containing the dinner for all the actual harvest men of the parish; and the other containing tea, cake, and bread and butter for all the women and children. A moderate but sufficient allowance of ale is given to each man, with tobacco at discretion, and the people appear to thoroughly enjoy themselves. There is no lack of singing, dancing, or merriment; the children play and romp in the field after tea; whilst the elders, according to their individual inclinations, either remain in the tent, or stroll out, pipe in hand, to look on, and to gossip with their friends.

And thus the village harvest festival passes merrily off, without any instances of bad conduct or drunkenness; and giving one proof more of the fact that the Englishman, no less than the foreigner, is capable of rational enjoyment; that intoxication is no necessary ingredient to his happiness; and that when we treat poor Hodge less as a *machine* and more as a fellow being, endowed with like powers and faculties with ourselves, blunted or undeveloped though his better nature may be, endeavouring kindly to *lead* and not *drive*, we may take as truth the lines of a benevolent poet, and say,—

"Tho' the wisest be but erring,
Tho' the selfish be a curse;—
In the sounding march of progress
Follow better things, not worse."

But we must protest against the tendency observable in many quarters to render these gatherings mere opportunities for oratorical display. There is no more melancholy spectacle than a crowd of half-sleepy, tired-out labourers, gazing with a stolid vacant stare at the platform, or listening, with bewildered mind, to the grandly-turned sentences of the speakers, and trying, vainly enough, to persuade themselves that they are happy and comfortable! Such proceedings tend to bring these festivals into disrepute with Hodge, who, we may be sure, revenges himself the next evening by having a fuddling carouse

at the "Ploughboy and Whistle." To provide the means of rational amusement, to encourage all to participate therein, and to refrain from any further interference, excepting as fellow-sharers in the sport and merry-making, will be found the means most conducive to the success and prosperity of the festivals, even though their patronizers do not fill the columns of the local papers with reports of their long-winded speeches; nor have their names blazoned forth as the condescending patronizers of our modern HARVEST HOMES.

FOREIGN CORRESPONDENCE. PARIS.

WHEN Prince Napoleon showed so strong a desire *not* to meet the Duc d'Aumale upon the occasion of his famous pamphlet, the Parisians, who are always ready to take out in spite what they cannot obtain in liberty, used to go about reciting, to the monotonous chant of "*les Lampions*," the simple words, "*viendra-t'il? il ne viendra pas!*" This, like all cant expressions under a despotism, got to have a political meaning, so anti-dynastic that it was soon forbidden to repeat the words I have noted, as it had been forbidden to sing the "*Sire de Framboisy*." When Prince Napoleon went to Geneva a couple of months ago, the Swiss, however, did not think that they were bound to silence; and while his steamer was delayed upon the lake, a chorus was got up of "*Partira-t'il? ne partira-t'il pas?*" which was anything but agreeable to the princely ears. Well, just now the ill-sounding words are applied in another sense, and one begins to hear them murmured on all sides *à propos* to the King of Prussia. "*Viendra-t'il? viendra-t'il pas?*" is the phrase repeated at every moment and on all sides when the much-talked-of visit is alluded to, and in truth the hesitation and uncertainty is becoming all but laughable. The aversion of King William to this interview is excessive, and it will do him a mischief in Germany, north and south, which it is almost impossible to describe. Yet, how is he to avoid it? Letter after letter is sent to Berlin by the Emperor Napoleon, and excuse after excuse is argued away, until any further excuses must be tantamount to a declaration of "hostile distrust," to use Lord John's famous words. Come, therefore, he probably will, this son of the lovely Queen Louise, whom the first Napoleon so outraged, and who repaid him by raising all Germany to vengeance in 1813. It is impossible for the king to avoid the visit; but it will probably not surpass the length of a day and night. Meanwhile, the Parisians go on chanting "*Viendra-t'il? viendra-t'il pas?*"

As to the Roman question, it is quite certain that, at the present moment, the Imperial mind is Papal. A number of reasons may be found for this, but the home causes are those that act most strongly. The bad harvest, the impending elections, and the sense of disaffection everywhere—these are the considerations which are inclining Louis Napoleon to adopt what is termed the "French policy" in Italy, but above all in Rome. If Ricasoli should quit the headship of affairs in Turin, and Rattazzi or Arese take his place, matters may assume a different aspect, for in that case Italy would doubtless offer ample "compensation" for the capital that France might be induced to vouchsafe to her; but unless this should be the position assumed by the two courts, that of Paris will most likely go on playing its hitherto double-handed game, and retaining what its adversary does not seem ready to purchase at a sufficiently high price.

Those who have their reasons for knowing how the Emperor Napoleon manages these kind of affairs, affirm that that is the meaning of the article in the *Constitutionnel*, and that all sorts of sympathies with Italy are set forth in that mysterious print, just at the very hour when steps are taken at Rome that are twenty times more decidedly pro-Papal than any that can be chronicled since the last ten years.

A strange story has been going the round here of the circles that should certainly be the best informed on such subjects: it is to the effect that there has been a species of understanding between the Emperor and M. Thiers, and that the present modifications in the line of conduct of the Tuilleries meet with the complete approval of the chief of the old Bonapartist faction. As in all incidents of this sort, there is, I fancy, a part of falsehood and one of truth. I believe it to be utterly untrue that there has been the slightest communication between Louis Napoleon and M. Thiers; but at the same time I imagine it to be certain that no one applauds an anti-Italian policy more than the author of the "*Consulat et Empire*." M. Thiers is what is called a Frenchman to the very back-bone; and the policy which seeks for the preponderance of France in Italy, is the one policy so pre-eminently French that no Frenchman ever weans his mind from it entirely.

After all, this is only another detail of the phase of Imperialism into which France is drifting—towards which I have drawn your attention sedulously for the last two or three months. France is awakening, of that there can be no doubt; but by degrees, as she awakens, she shows herself French; by degrees, as she shows herself French, she obliges her ruler to consult his own probabilities of safety in withstanding her wishes; and if this consultation leads to the conclusion that he cannot afford to withstand them, it is not very difficult to calculate what the result must be not only to France, but to many other countries in Europe. It is precisely this extremely delicate and complicated position, and these manifest tendencies towards a re-awakening of the traditional French spirit in France which I am convinced cannot be too closely studied on your side of the water. They are gradually leading up to mischief, and danger may be upon us before we distinctly see what its precise nature is, and what is the real quarter whence it comes. There is, depend upon it, in all the many complications of Europe just now, nothing so important as the internal modifications of France, and the various tendencies she is likely to force her rulers into adopting.

The following extract from the letter of a Hungarian gentleman may be not without interest to your readers. The writer is a Conservative, who has lived in almost every capital in the world and who has never yet given up the liveliest hope of a compromise being found between Vienna and Pesth:—

"I persist in my incorrigible opinion," writes this gentleman, "because out of the settlement by union there is, absolutely, no possible hope for a political future for Hungary. More people are convinced of this fact than is supposed, therefore I believe the whole to be simply an affair of time. What is called the 'agitation' of Hungary is eminently superficial. It is hollow—there is nothing

in it. No serious minded man will help it; he may lack courage to oppose it, but no one will help it. The politicians of my country (of whom Déak is not one, I beg to observe), are quite of opinion that union with Austria is the nation's only hope, the only means by which it can attain to its utmost development. Upon this point I do not fancy two opinions exist amongst our Conservatives, but many opinions exist upon the mode in which the Austrian government has set about achieving the union. Now we, who have no doubt of the Emperor's good faith and good intentions, see in this a matter of detail, therefore do I again say it is all but an affair of time."

BIARRITZ.

(FROM OUR OWN CORRESPONDENT.)

THIRTY years ago, the only access to Biarritz was but a beaten track across the sandy hills which surrounded the then mere hamlet, now the most fashionable of French watering places; no carriage dared venture there, and the sole means of conveyance was to ride, *en cacolet*, a mode peculiar to this spot. Across an old horse, or oftentimes a donkey or a mule, was placed a pack-saddle, and on either side a pannier or basket seat, without girths, turning from side to side according to the weight placed therein, thus demanding the greatest attention to the laws of equilibrium; this was to ride *en cacolet*. The traveller accepting this mode of conveyance hoisted himself into the seat on one side, while his conductor, usually a young lass with a handsome face and active limbs, sprang into the other, taking with her a heavy stone or two to make the balance perfect. Thus seated side by side, the stranger at first dared not move hand or limb for fear of destroying the equipoise; but by degrees he became accustomed to his seat, and could venture to turn his head, and to reply to the sallies of his vivacious companion. Many are the stories told of some too enterprising traveller whom the enticing smile, the white teeth, and pretty features of his charming conductress had made forgetful of the rules of propriety, and how she avenged herself by gliding from her seat, and letting the daring stranger roll ingloriously in the dust. Riding *en cacolet* has been almost entirely banished by the formation of very excellent roads, but it may still be seen on market days practised by the peasant women seated on one side, with their wares for market on the other.

The village of Biarritz is situated five miles from Bayonne, near the mouth of the Adour, in the Gulf of Gascogne; it is composed of a number of small cottages irregularly built, and scattered over the steep and rocky cliffs, with five or six large hotels, cafés, and restaurants, the total number of whose actual inhabitants is not more than 2,500, who are all by profession either lodging-house keepers, carriage drivers, or bathers. There is certainly but little in Biarritz to justify the extraordinary favour which it enjoys at the present time; there are no agreeable walks in the neighbourhood, and no shade in the town itself; but to compensate for these defects, the climate is delightful, and the sea-breeze constantly moderates the otherwise great heat of this southern coast. The aspect of the sea is magnificent, as it rolls in all its grandeur, breaking over the masses of rock standing far out from the shore, and roaring like distant thunder through the caverns perforated by the action of the water. The Villa Eugénie, the Imperial residence, situated on a rock to the north of the town, and built with red bricks and white stone, is composed of a ground and first story only, and very unpretending in appearance; a more barren situation can scarcely be imagined, without a tree, or the slightest shelter around it, and exposed on all sides not only to the winds, but to the curiosity of travellers naturally attracted towards it. Attempts have been made to form a garden, and to cover the sandy slopes with grass, but the proximity of the sea renders it impossible to cultivate either flowers or trees. The view, however, is fine; to the north and west is the immense expanse of the Bay of Biscay, while to the south, beyond the rocks of Biarritz, are seen the white cliffs of the Basque provinces, and the shores of Spain, with the long range of the Pyrenees rising in the distance.

Of those who visit Biarritz the Spanish families are the most numerous, and are the first to arrive. A great object with them appears to be to obtain the Paris fashions; they purchase largely, and then depart. The Parisians arrive next, remarkable for the amount of luggage they bring with them; and lastly come the English. Besides these, there are many Russian and German families. Life at Biarritz is half consumed in the water. The sea is deliciously pure, and the sands firm and smooth, rendering the bathing everything that can be desired. Prettily-erected wooden structures are placed high up on the beach, where the bathers change their ordinary dress for the *costumes des Bains*; that of the ladies consists of woollen trousers, and jacket of varied colours, according to the taste of the owner; slippers with rosettes; a straw hat, to protect them from the sun, and a couple of large gourds, corks, or bladders tied round them to support them in the water. Thus attired, ladies and gentlemen, bathing together, may be seen floating about for hours. The use of the gourds renders it impossible to sink; but a boat of the Society for the Preservation of Life is always at hand in case of accident.

In the evening Biarritz resembles a collection of tea gardens. The visitors sit about under the trees, which are trained horizontally; stalls line the streets with trumpery Parisian, Spanish, and Oriental wares; and itinerant vendors of cambric handkerchiefs, silk sashes, and Toledo blades display their goods to seduce a purchaser. Now and then a ball at the casino, or a representation at the theatre, becomes an excitement. The ladies indulge in every variety of toilette, of the most eccentric description, and are quite as ridiculous here as at Baden, Vichy, or Brighton, though it must be admitted that they understand the art of combining colours, and often render themselves very picturesque; but the last new fashion of carrying canes in their hands certainly is not to be admired.

The visitors at Biarritz have just been treated with the excitement of the *Course Espagnole*, which took place at Bayonne on Sunday and Monday last, directed by the famous *torador*, El Tato, and under the patronage of their Imperial Majesties, and honoured by the presence of the Emperor himself. The day was excessively hot; the company brilliant; and all the beauty of Biarritz and Bayonne was present. At four o'clock the Emperor arrived, accompanied by two ladies and a large suite, and the band of the 2nd Regiment sounded a fanfare as he entered the imperial box. The troop of the *toreros* then entered the circus, conducted by their chief, clothed in the richest Castilian costume, and made their obeisance to the Emperor. The

sport immediately commenced. The first bull entered, was worried, and dispatched without much interest. The second, however, more furious, entered the arena with a roar, rushing upon the first picador, whose horse, in a few moments gored by the bull, was completely disembowelled; a second horse was dispatched in the same manner, and the sight was most disgusting. One was got out of the circle, but the other dropped, and it was horrible to see the fury of the bull vented on the expiring animal. Six bulls entered the ring one after the other, similar scenes occurred, and in all seven horses were killed. The last scene of each act, where El Tato dispatched the bull, was remarkable; especially in the instance of the second bull killed by him. After having given the stroke he withdrew his sword from the wound, and the animal fell dead at his feet, a thing that rarely happens. Immense grace, activity, and *sang-froid* were displayed by the whole *cuadrilla*. The enthusiasm of the spectators was extreme, and the applause which followed some furious rush of the bull, or narrow escape of man or beast, was heard from all sides, while cigars, caps, handkerchiefs, and trifling presents were thrown to the *toradors*, to testify the satisfaction of the public. Of the whole number of spectators, two-thirds, perhaps, were Spanish, and included nearly all the ladies present. To them it is their national sport, and the Spaniard defends his bull-fights with the tenacity he would defend his country. They are the representations of the ancient chase which took place in the forests; and the *matadores* have their arms engraved on Iberian medals anterior to the Roman occupation. The Spanish bull has also numerous statues erected to him in Spain and Portugal. A colossal one formerly adorned the bridge at Salamanca, and one of curious workmanship has lately been discovered in Catalonia.

FLORENCE: THE OPENING OF THE ITALIAN EXPOSITION.

TUSCANY, and Florence its capital, and the main representative and exponent of Tuscan ways and habits, has been punctual, probably for the first time in the course of its municipal existence. Florence has been punctual, and in a matter in which punctuality was in no slight degree difficult, and in which some little want of it might well have been pardoned to communities more experienced in such matters, and more generally accredited with the qualities of activity and enterprise. The First National Italian Exposition of Industry and the Fine Arts has been opened on the day long since named for the purpose,—the 15th of September,—by the king in person.

The "*Re galantuomo*" arrived in Florence for the purpose on the evening of the 14th, amid every sort of manifestation that could mark the affection and enthusiasm of his subjects. He had a fine day for his passage from Genoa to Leghorn, and for his entry into Florence, and a second for the great ceremony of the opening,—to the infinite disgust and disappointment of the small and impotent clique of the "*Codini*." The changeless fair weather of our summer has come to an end; the weather "*has spoilt itself*," as the Italian phrase goes; it threatens rain, and the malcontent "*Codini*" have used all their efforts of importunate intercession with Saints and Virgins to obtain a timely wet day, which should, at least, be sufficient to mark the disapprobation of Heaven for all that Italy has done and is doing. But the Saints have been deaf to their entreaties, and the great day has passed as favourably as the most enthusiastic patriot could wish.

Those who have had some experience at home of the work of organizing and preparing an exposition of this sort will appreciate in some degree the feat which Florence has accomplished in opening this first National Exposition on the day fixed for the purpose; *in some degree only*, for their experience will have been drawn from the difficulties encountered in a country where every facility and appliance towards the object abounds; where skilled labour of every kind may be commanded to any extent; where workmen are taught to be punctual; and where workers both with the hands and with the head are in the habit of pulling together. And Florence, "*flower of cities*," as it boasts itself, and as it may in many respects be, as yet presents conditions as diametrically the reverse of all this as possible. The Florentines wonder at what they have done themselves. And most assuredly they would not have done it but for the fortunate and timely presence among them of one man very specially gifted with the talent of organization. Without Signor Cavaliere Francesco Carega, the Secretary General of the Royal Commission for the Exposition, it may very safely be asserted that it would not now have been an accomplished fact. His laborious and indefatigable energy and industry, his real talent for practical business, and firm determination to succeed in spite of an ever-increasing and newly-springing crop of difficulties, has alone triumphed over every obstacle.

To a person walking through the building, or group of buildings rather, in the afternoon of the Saturday, it seemed impossible that all should be in any decent state of readiness for the ceremony of the following morning, so much yet remained to be done, and so hopeless seemed the confusion throughout the building. Yet at ten o'clock on the Sunday morning Signor Carega had his triumph, the king found everything in due order for his reception, the crowds of "*good Italians*" assembled from every part of Italy were delighted, and the "*Codini*" were forced to abandon their last cherished hope that the whole thing would prove a "*fiasco*!"

It was in truth a striking and memorable scene, that of the opening this morning!—more so by far than those will understand who do not bear in mind the special and peculiar position of Italy, and who regard this national festival as the purely industrial and commercial affair which it is in the case of other countries. The Italian appreciation of the significance of this first National Exposition is a very different one. Every man there present, from the king down to the porters at the doors, felt that the occasion had a political bearing and significance more important and more interesting than its merely industrial one. It was the first result of a truly national effort; the first occasion on which the thoroughly blended co-operation of every part of Italy was ever seen in action. And the Italians are quite right in feeling that, though the cloths and calicos, the machinery and the hardware exhibited as the product of the national industry may be inferior to those of the nations who have had so great a start of them in the career of modern civilization, yet in the face of the immense encouragement derivable from this great fact they have not only no cause to give up the race in despair, but have every reason to look forward to a future rich in promise of every kind.

"Never mind where we stand in the great race just at present. We have at last got started in it! That is the great fact, the glorious certainty, which inspires the enthusiasm, we are all manifesting to-day!" This is the

sentiment that was uppermost in every man's mind, as he witnessed this morning's ceremonial. The Italians have unlimited confidence in the resources of their country and of its inhabitants, if once fair play can be allowed to it and them. And, looking to the history of the past, it is difficult to deny that they have legitimate and abundant grounds for their high hopes and aspirations. When the circumstances of social and civil life on the northern and on the southern side of the Alps were not so dissimilar as to place them at an invincibly great disadvantage, they did more, much more, than hold an equal place in the history of European civilization. If we could imagine the holding of such a national exposition of all the products of human art and industry in the fourteenth or fifteenth centuries, the difference in favour of Italy in any such rivalry would have been assuredly more marked than is her inferiority to other nations now. Where could have been found, then, the sculpture, the painting, the jewellery, the armour, the house furniture, the forgings and castings, the carvings and the mouldings, the printing or engraving to match with her's? Nature is not less bountiful to her in the nineteenth than in those old but not forgotten centuries. Has the race of her inhabitants become so entirely changed and destroyed by all the long series of calamities and degradations she has undergone, as to be no longer capable of walking in the steps of their ancestors? Italy thinks not; and points to her present aspirations, and to what she has already accomplished towards the realization of them, as a proof of the correctness of her opinion. If Italy were not aware that her present place in the race of material industry and civilization was a very secondary one, there would be no hope for her. She is perfectly aware of it. She regards this exposition but as a means towards ascertaining and remedying her deficiencies. And it will be a great mistake to imagine that the Italian glorification of this effort, and rejoicing over it, indicates any self-delusion on the subject. It is solely the expression of the national triumph at having at last been enabled to enter the lists with other nations, and take a place at the starting post, even now, when her competitors are far ahead in the race.

One curious indication of the manner in which the Italians regard the political significance of the Florence gathering as more important than the purely industrial object of it, is the welcome accorded to the small contributions from Venetia and Rome. It is literally a case of the greater rejoicing over the one poor captive, than over the ninety and nine prospering cities, which need no deliverance. Of course both Pope and Emperor have done their utmost to prevent the cities remaining under their gripe from taking any part in this industrial congress. Of course, in the exercise of their usual discretion and wisdom, they have judged it to be prudent and expedient to say virtually to their subjects, "*What have you to do with progress in arts or in commerce? What share can you have in tokens and expectations of prosperity and industrial progress?*" While the busy, happy hum of the activity of your free brethren is heard from afar over the boundaries that cramp and hedge you in, it is yours to sit with folded hands and earthward-bent looks in aimless and hopeless bondage! Hug your chains; leave progress and happiness to others, and be still!" This of course was to have been expected from Pope and Kaiser. They have but acted in this as in all else, according to the instincts of their kind. And it was hardly to have been anticipated that any of their victim subjects should have found the means to evade, and dared the consequences of contemning their decrees. Yet some such there have been. And great is the exultation accordingly over the feeble and truly pathetic attempts made by the captive tribes to assert their presence also at the national gathering, and to associate themselves with the hopes and efforts of their brethren. It is but little that it has been possible for them to do, but it has been enough to justify the emblazonment of "*Venezia*" and "*Roma*" among those of the hundred sister cities, whose representatives are here, and the names and escutcheons of which ornament the roof of the Industrial Palace. Nor is there an Italian here, whether from the slopes of the Alps, or from the furthestmost shore of Sicily, who does not point to those names with more of pride and hope than to that of his own already free city.

And the gentlemen who sit in the cabinets of Europe imagine that it is on the cards that these things can endure, that Rome and Venice shall continue in their state of bondage, that those drops of water can be kept from gliding to unite themselves with the neighbouring mass from which they have been severed. Bah!

The ceremony of the opening was all that it ought to have been, and much about what such things generally are in other places. A vast semicircular hall, of really magnificent size, forming the extremity of the building at the end opposite to the main entrance, was very tastefully fitted up as a throne-room. All round the circumference was a raised orchestra, filled with all the instrumental and vocal (male and female) musical talent to be found in Florence; and of that product, at least, there is no lack in the "*Gentile Città*." The throne was erected in the middle; and, with the exception of a moderate space in front of it, all the rest of the room was occupied by the ministers, diplomats, senators, deputies, members of the juries, exhibitors, holders of season tickets, *members of the fourth estate*, and their respective wives; for in Italy every admission to every similar festival or ceremony is always understood to include a lady on each gentleman's arm.

I have especially noted the presence of the representatives of the press, admitted as such by special tickets, because this recognition of the fourth estate is a new thing in Italy, and one of the not least important, though small, signs of her right comprehension of the nature of the social path on which she has started.

Our favourite "*Ré Galantuomo*" failed in the "*politesse des rois*," so far as to make us wait for his appearance half an hour longer than we ought to have done. But that in no wise produced any feeling of discontent among a people vastly more patient always, and under all circumstances, than that reputed steady and easy-going character, John Bull; nor did it in the least damp the ardour of the enthusiastic reception his people gave him. But nothing could induce the recalcitrant monarch to get into the grand chair prepared for him, or even to take up his stand in front of it, so as to do his part towards making up the show. After walking two or three times up and down the area left vacant in front of the throne, staring about him with that wide-open, bold, frank, blue eye of his, and reminding one by his manner of some noble beast of the forest driven into some new and strange environment, which utterly confounds and alarms him, he ranged himself, with his cousin Carignan by his side, just in front of the bystanders on one side of the

vacant space, to the despair of a poor photographer, who was lying *perdue* somewhere with his machine, to get a representation of the scene with the king "in position"—"a sitting on his throne," as kings should.

Then the Marchese Cosimo Ridolfi said the proper things in a judiciously short speech—it is well known that Victor Emmanuel considers brevity to be the soul of wit on these occasions—and the King replied in a still shorter, complimenting Florence on all she had done for Italian unity, and was now doing for Italian prosperity and progress; and alluding to the propriety with which this first national festival was held in Florence, the ancient mother and teacher of every kind of artistic and industrial activity.

Then the orchestra gave us a hymn composed for the occasion, which was all very well, but which is not perhaps likely to become a stock piece of favourite music. Then La Piccolomini sung the well known "Croce di Savoia," giving it with immense enthusiasm of manner and gesture, and with all the voice at her command. The king graciously caused her to be brought down from the orchestra to him, and complimented her. The Exposition was declared open; and everybody congratulated everybody else.

OYSTERS—OYSTER FARMS AND OYSTER CULTURE.

THE oyster season having set in with its accustomed severity, the shell-fish shops of London have put on their usual attractive appearance, filling their windows with tempting crustacea, and in their store vaults having a hidden supply of "natives" equal to every emergency. Any quantity of those fascinating mollusks can be had in these appetizing resorts for the asking, accompanied with those equivocal condiments, which have evidently been designed for the purpose of inducing constant repetitions of the supply, as at best they only serve to disguise the native flavour of the animal. It is most noticeable this year that the oysters are smaller than is usual at the beginning of the season. Indeed, of late years, a very gradual but steady diminution in the size has been noticed, indicating that the demand has induced the taking from the beds of very young specimens, a practice which must in a short time tell with fatal effect on our annual supplies, as it has already done on those of France. It is notorious that the holiday of four months which has been so long accorded to them is now severely trenced upon; that in fact oysters can be had at any time throughout the year. It would be well to curb this greed on the part of oyster eaters, and to insist on the rigid observance of the four months' vacation, during which the animal might have time to rest and breed. Let it not be forgotten that while in ancient times we were supposed to have had upwards of two hundred varieties of oysters, we have not at present a fourth part of that number.

It is asserted of this mollusk, as it has been asserted of fish and crustacea, that their enormous power of reproduction forbids at once and for ever all idea of extermination. When this "idea" comes to be examined—for the probability is that there is a considerable amount of exaggeration employed in estimating the produce of the sea—it will be found, although each oyster yields, as is asserted, some 50,000 eggs, that, as in the case of the salmon and other fish, a large proportion of the eggs never obtain a fixed position from which to grow, and that the largest quantity of those which do obtain a resting place are destroyed before they can be of any commercial value. The fact is, that at present we really know very little about the natural history of the oyster; so little that there is, or was lately, but one drawing of its anatomical structure, and that one was said by some naturalists to be very imperfect. The body of this favourite mollusk, as seen in its shell, looks like a mass of creamy gelatine or blubber, and gives no indication of ingenious structure or lifelike organization. At one time naturalists had agreed that the oyster was totally destitute of all powers of active existence, and thought to be little else than a superior kind of vegetable destined to perpetual confinement in its shelly prison. But when examined by the lights of natural history and the microscope, the oyster was found to be a better developed animal than was supposed; and, if not itself of high structural perfection, it gave indications at least of some of those wonders of the lower life, which are so beautifully elaborated in the higher animals.

The generation of oysters, so far as it has been observed, is as follows:—The young brood is exuded from the old animals in the shape of what is called "spat," a fatty substance of a greenish hue. When examined by a powerful magnifying glass, this matter is found to be instinct with life, containing amazing quantities of little oysters, perfectly formed and ready to commence growing at once, so soon as they can attach themselves to a stone or rock, and for this purpose they are provided with valves which enables them to cling with great ease. Oysters grow, it is said, with amazing rapidity; but we do not believe them capable of reproducing themselves at the age of four months, as has been asserted by some writers! Had nature conferred upon them such a power, we might be able to laugh all ideas of scarcity or extermination to scorn. But at the age of four months the infant oyster is not much bigger than a pea, and we suspect that the animal will be at least three years old before it be able to perpetuate its species. The period when the oyster sickens is about the end of April; in May it begins to shed its spawn, and then remains "poorly" till September, before which time oysters ought not to be eaten in anything like quantity. A writer in a popular periodical points out the way to ascertain the age of an oyster:—

"A London oysterman can tell the ages of his flock to a nicety. The age of an oyster is not to be found out by looking into its mouth. It bears its years upon its back. Everybody who has handled an oyster-shell must have observed that it seemed as if composed of successive layers or plates overlapping each other. These are technically termed 'shoots,' and each of them marks a year's growth; so that by counting them, we can determine at a glance the year when the creature came into the world. Up to the time of its maturity, the shoots are regular and successive; but after that time they become irregular, and are piled one over the other, so that the shell becomes more and more thickened and bulky. Judging from the great thickness to which some oyster-shells have attained, this mollusk is capable, if left to its natural changes unmolested, of attaining a great age."

If allowed to grow without being broken upon, oyster beds would soon become so extensive as to be injurious to navigation. The animal is so local in its habits that it is only by accident the young oyster gets farther away than a few feet from the resting-place of the parent. It would savour of dogmatism to maintain now that oysters are hermaphrodite, because this "theory,"

which is an old one, has been ably argued against and much proof has been adduced that each member of the oyster family is male and female, and as separate and distinct as any other shell-fish.

The organization which is constantly at work for supplying the great metropolis with oysters is more perfect than can be said of any other branch of the fish trade. In oyster culture we approach in some degree to the French, although we do not, as they do, begin at the beginning and plant the seed. All that we have yet achieved is the art of nursing the young "brood," and of dividing and keeping separate the different kinds of oysters. This is done in what we may call parks or farms, and the whole process, from beginning to end, may be viewed at Whitstable, where there is a large oyster ground and a fine fleet of boats for the purpose of dredging. Young oysters are brought from various places and laid down in the Whitstable beds in assorted lots, the place pertaining to each being marked off by tall fir poles, so that "commons," "roughs," and "natives" cannot be mixed. Then in dredging, as the boat is right over but one division at a time, the small oysters are thrown back into their proper depot, there to grow and fatten till they are of the requisite size. The same practice prevails on other grounds, and the oyster is all the better for the protection which is thus afforded.

In France, among the works which have been projected for the resuscitation of the fisheries, great attention has been paid to the creation of oyster-beds and to the propagation of the oyster. Artificial banks of considerable magnitude have been carefully prepared, and countless thousands of the much-prized animal have been spawned on these receptacles, so that in a very short time the French will again have a never-ending supply of this much-prized delicacy. Indeed, the produce of these artificial banks has already been brought into use, and is found to be quite as good as, and far more plentiful than, the supplies formerly obtained from the natural beds. The grand secret of successful oyster-culture lies in the fact of the seed obtaining an immediate and permanent resting-place; should each minute globule not at once get itself firmly attached to some "coigne of vantage," all the chances are that it becomes a lost oyster. In order to afford points of attachment to the spot, the French pisciculturists have hit upon the plan of sinking in the water a series of fascines constructed out of branches of trees, and these, resting upon an artificial bottom composed of fragments of stone and brick and of pieces of broken pottery-ware, afford capital breeding ground for any quantity of oysters. This has been proved. The beds laid down on the coast of Brittany have been most productive; they were stocked at the commencement with about three millions of breeding oysters. These have multiplied to a vast extent; as a proof it may be mentioned that twenty thousand small oysters were found attached to a branch plucked from one of the beds! Moreover, these experiments are found to pay. One of the official reports on the state of the fisheries tells us that,—

"The total expense for forming a bank was 221 francs; and if the 300 fascines laid down upon it be multiplied by 20,000 (the number of oysters they contain) 600,000 will be obtained, which, if sold at 20 francs a thousand, will produce 120,000 francs. If, however, the number of oysters were to be reckoned at only 10,000, the sum of 60,000 francs would be received, which, for an expenditure of 221 francs, would give a larger profit than any other branch of industry."

Founding on these figures, an idea of the cost of constructing a series of great oyster-beds on our own coast can at once be obtained. M. Coste, to whom has been delegated the task of re-constructing the fisheries of France, has laid down several thousand oyster-beds, some of them very large, one in particular being 2,400 yards in superficial area. These artificial beds were first constructed by Sergius Orata, who bought and sold oysters in the day when ancient Italy flourished in pristine grandeur. Orata and his contemporaries were well versed in all the arts of animal cultivation which enhanced the delights of the table, and they were particularly distinguished for their knowledge of the art of fish-breeding. To such a length, we are told, did they carry their experiments, that fish were so acclimatized as to be able to live in wine! and salt water varieties were trained to live in fresh water, and *vice versa*.

The geographical distribution of the oyster is extensive. Large quantities are found on the American coasts, and at the Antipodes. On the coast of Africa the *ostrea edulis* is also plentifully sprinkled, and have we not places where the oyster grows on trees, and can be plucked like an apple or an orange? In a history of the British mollusca we find the following interesting paragraph on this subject:—

"The tree oyster attaches himself to the roots and branches of mangroves, as a place of refuge and security. Some persons affect to treat this statement as one of uncertain origin, but the solution is by no means difficult. In hot countries a great variety of shrubs and trees grow on river banks, and even along the shore, especially in such places as are screened from the agitation of the waves. The sheltered recesses of bays and harbours are, therefore, often filled with abundance of lofty mangroves, which grow up from the shallow bottom, and present the beautiful appearance of marine forests. Wherever they appear on the sea shores the beach is not only covered with an infinite number of different insects—feeble beings which love the shade—but also with mollusks, that hasten to shelter themselves from the violence of the waves, amid the scaffolding of thick and intertwining roots, which rise like lattice work above the surface of the water, or the branches that dip into it. And to these the parasitic oysters attach themselves in such numbers, that a loaded branch, when cut off, is too heavy for one person to carry. The loaded branch is then washed, and brought to table, where it forms a favourite appendage at the banquets of the rich; for the glowing tints which are so literally imported to the birds and flowers of tropical regions extend occasionally to the unassuming oyster. Many of the species are beautifully shaded, and the shells of such as inhabit the red sea are frequently varied with the vivid colours of the rainbow."

We cannot in this country boast of anything so picturesque as the above description in connection with this favourite mollusk. But for all that, a trip to Whitstable, or Prestonpans, near Edinburgh, or some other fishing town, either English or Scotch, during the oyster season, is well worth the attention of the *blasé* idler. Sea-side loungers could not do better than assist at the dredge. Great hauls for naturalists are to be obtained on these occasions, and the minor wonders of the deep—

"Of shells and sea-weeds, corals, corallines,
Borne up perchance from many fathoms deep,"

incidental to oyster dredging cannot fail to yield instructive and entertaining occupation to those who interest themselves in the wonders of the shore.

To return to London, we may be allowed to state, by way of conclusion, that the oysters which are supplied in the shell-fish shops of the great metropolis are justly considered to be far inferior in flavour to those obtained at the sea-side, or in the taverns of Edinburgh. The "prepared" London oyster is quite a different animal from the real "native," as opened and eaten at a short distance from his bed, accompanied with a good mouthful of the water, in which he has been confined in his shell; in fact, he is "sophisticated" with oatmeal, which, if it allows of a gain in the way of fat, inflicts a severe loss in flavour. Brown bread and butter, lemon juice, vinegar, London stout, and chablis, are all well enough if one intends to dine or sup upon oysters and nothing more; but the true flavour of this animal is only obtained by eating it *au naturel*. To cook an oyster is utterly to spoil it, as an individual substance; of course it lends a rich flavour to a soup, or any other dish, but to enjoy the real thing in perfection it must be eaten raw, served up on its own shell, with its own liquor as the only sauce.

THE POTATO DISEASE AND ITS REMEDIES.

IN THE LONDON REVIEW for August 24th, we published an article on the above subject, which has attracted considerable attention, and we have received in relation to that article a number of communications of more or less interest, some of which we published last week, and the objections contained in which seem to require some further notice. To make our comments the more intelligible we will briefly enumerate one or two of the more prominent facts which the article referred to set forth. It was there shown for the first time by actual facts, that, antecedently to the true ravages of the disease itself, there is a state of inanition in which the peripheral substance of the tubers predisposed to the disease, is starved of its starches. The cells in this case, especially in the worst or most ill-nourished tubers, are, in the outer portion of the tuber, entirely empty of starch. In the healthy potato the case is different entirely. Though the peripheral or outer portion of all tubers must be regarded as at the remotest point of the circulation, as are the extremities in the animal; and though, moreover, in the tuber, it is possibly at the remotest point of nutritive agency, yet in the healthy tuber the cells invariably contain starches. Nay, starches have often been detected in the cells of the epidermis itself in a good sound tuber. Further investigations into the condition of diseased and predisposed tubers from other parts of the country, and made since the publication of the article referred to, have tended directly to confirm the facts and views there brought forward.

These facts, then, proving incontestably that the plants thus weakened or starved, either originally in constitution, or by some more or less partial failure of the nutriment furnished by the soil, from its having been too constantly used for the same plant during many years, or by both these conditions, the absolute necessity of a more natural mode of cultivating the potato was strongly urged. The essence of this method consisted in an annual change of soil, a selection of sets of the best quality and from different districts, with the other accessory or more common-place measures before referred to—in fine, a mode of cultivating the potato plant which is understood and acted upon, and proved, both by science and experience, to be beneficial and highly essential, in regard to all other important plants used as food by man.

One of our correspondents, however, has another view of the whole subject, and another remedy for the evils. We give his propositions in his own words. He says:—

"The manner of propagating the potato from tubers is essentially different from the ordinary mode of propagating plants from seed. Whenever a seed is sown there springs up a *new* plant; but when a tuber is sown, it is merely transplanting a portion of the original plant. In the one case we have a fresh life, in the other there is no new vitality."

He considers that when a plant has been grown from tubers instead of seed for fifty years, a single individuality has been fifty times transplanted, and observes—"Who then can wonder that its organism should become impaired, and that decay and disease should make their appearance?"

Our correspondent's conclusions are thus stated:—

"There is only one way of obtaining a new plant, and that is from the seed. When plants are raised from tubers, or trees from grafts or buds, it is not a new life that is obtained, but a continuation of a portion of the old one. When a graft is taken from a tree, it does not become a new tree, but merely a branch of the original stem. It is stated that several kinds of apples are becoming extinct, the Ribston pippin, for instance; and this might naturally be expected."

He thus conceives that "the natural mode of reproducing plants is from seed; but, in the case of the potato, several years must be lost before a full sized tuber can be obtained."

Such are the views of one correspondent, but these views contain several grave misapprehensions, as we will proceed to show. In the first place, not much scientific knowledge would have been required to make him acquainted with the fact that there is more than one *natural* mode of obtaining a new plant. The seed, therefore, is not the only method of a natural reproduction. There are at least three. If he will take a full-grown bulb of garlic and peel off the tunic, he will find at the base a whole crop of young bulbs, feeding when in a state of growth upon the maternal substance, and sheltered like the chickens beneath the maternal wing, and by the body of the hen. These "cloves," technically so called, are intended by nature to assume an independent life. The same fact will be shown in the case of the hyacinth, the base of its bulbs, when mature, being surrounded by a new generation and independent future progeny. Again, in the bulbiferous lily and some other plants a bulbous progeny is developed even upon the stem in the axils of the leaves. These young bulbs will fall off when ripe, and become new and independent plants. As if to make nature's resources intensely evident in this very matter, we have a crop of reproduced young in the shape of bulbs at the very apex of the stem,—the place generally occupied by the organs of fructification. This most remarkable arrangement is seen in a plant termed familiarly the free onion, which bears on the summit of its stem the crop of young bulbs instead of flowers, capsules, and seeds. Here, then, is one natural method of reproduction entirely distinct from that of seed. We

need not go into the other methods, as not being immediately connected with the object we have in view.

Now, in a strictly natural or scientific sense all these young bulbs are *buds*, and bear an exact analogy to the buds and growing points in the potato tuber. Our correspondent's idea, therefore, that propagation by tubers is essentially the same as that means of prolonging an individual tree or variety by grafting, seems a misapprehension. The system of grafting is purely artificial, the other mode is as purely natural. One is provided by nature alone, and endowed with independent powers of future existence and development; the other is a mere artificial and temporary expedient for prolonging the life of a single plant or variety. One is a distinct, complete, and perfect being; the other is a compound, half old and half new.

This is not the only serious error of our correspondent. The statement that we can secure a healthy plant from seed, or the inference drawn, is equally questionable. Can we expect a healthy progeny from weakly or diseased parents in the animal world, or in man? We all know the contrary fact. Does the farmer select seed from a strong and vigorous, or from a weakly and delicate plant? Seeds as well as tubers are endowed with the peculiar features and qualities of the plants that produced them, whether these be good or bad. We shall see at once that the inference proves that not the slightest confidence can be placed in any such expedient as that suggested, for, in the vegetable kingdom just as in the animal, the time for improvement, and even for keeping up the vigour of the organism—for acquiring, just as for preserving, a healthy constitution, is the *period of active life*, and that only. The drawbacks on using seed in potato growing, instead of tubers, apart from all this, would be most serious.

The selection and use of healthy bulbs and seeds in regard to plants in general, and of healthy tubers in the potato, is one common element of success; but it does not affect the question in the slightest degree as between the seed and the tuber. Good seed in general, and good tubers, are requisite to begin with. They will produce healthy plants at the season of maturity, only when the other conditions of life, health, and vigour shall be super-added.

It must be thus manifest that the potato tuber is to be considered as capable of reproducing the species as the seed. It is besides far more convenient, and no doubt intended to be such by nature. It affords compensation for certain acknowledged shortcomings as to production by the seed, and we may assume, was designed so to do by an all-wise and gracious Providence, just as in other cases which might be pointed out, if space permitted.

Another correspondent, writing from Shropshire, and giving us an account of his personal experience, says:—

"I find in page 636 of the 'Panorama of Science and Art' (published many years ago, but without a date), the following remark:—'Potatoes are often extensively injured by the curl, a disease in which their leaves shrivel up, and the cause of which, unless a general effect of the weak state of the plant, is not yet discovered. The best modes of guarding against [the disease] consist in using seed from distant districts, and in promoting the health of the root by careful culture.'

"I observed, in the year 1847, a kind of blight which appeared to have struck my orchard trees, in a current of about 4 to 6 feet broad; in the same direction, by following the supposed current, I found the gooseberry and currant bushes similarly affected. Still following the direction of the said current, I found the potato haulm similarly affected. The potatoes very soon became diseased as far as the supposed current of blight had passed. This was after a series of thunderstorms."

He further adds:—"I also noticed that in the immediate vicinity of a tall weed, as an asparagus plant, the potatoes escaped;" and asks, "Is the disease caused by the electrical state of the atmosphere?"

It does not appear to us that there is any mystery here whatever. No doubt lightning, or an electric current of less intensity, is quite capable of inflicting even much more serious injuries on orchard trees, gooseberry trees, and potato plants indiscriminately than our correspondent relates; but a *great depression of temperature*, favoured and promoted by wet, and accompanied into the bargain with a current of biting wind, is of itself sufficient to kill parts of trees, and especially leaves and young shoots, while few plants of lax tissue, like the potato stem, could bear such a current without serious, sometimes fatal injury. Under such circumstances premature decay in the potato, especially when predisposed to it by any external cause, is just what we might expect. There is thus no necessity to resort to any *imaginary* current of electricity. We have a potent and known cause without it, and we have, besides, fair internal evidence of its absence. A potato plant which is *sheltered*, if even by a gooseberry bush or an "asparagus plant," or by any other means, will often escape injury, while a current of electricity would certainly not spare any plant in its course, in such conditions.

We have no scientific evidence of the condition of the tubers in what was formerly described as "curl" in potatoes. The leaves being curled up and their functions destroyed, growth and nutrition became impracticable. The tubers, being extremely small, showed at least an arrest of development, growth, and nutrition. As the nutrition of a plant depends essentially upon the functions of the leaves, and progresses also in absolute proportion only to the number, life, and health of those leaves, we expect growth and nutrition, or arrest, and perhaps decay, just in conformity with the conditions which those leaves present in all the various cases. This is amongst the best-established laws of vegetable nutrition.

A correspondent in Ireland seems to suppose we considered the potato plant independent of atmospheric influences. We certainly intended to lead our readers to an entirely opposite conclusion.

Another correspondent writes from Birmingham:—

"In the last number of your paper, when writing on the potato, you gave us a subject in which we are all interested. Whatever the real cause of the potato disease may be, it is generally admitted that a dry sandy soil suits it best, as the following homely experience proves. This year a Bridgenorth gentleman, when planting some potatoes in his garden, placed three of them under the shade of a large currant bush which happened to be at the end of one of the rows. The stems and tubers of these potatoes, when dug up, were all diseased, with the exception of the *three* aforesaid sheltered plants, which were perfectly unblemished."

We may not easily perceive how our correspondent obtains his conclusions

from his premises, but at the same time there can be no doubt that a comparatively dry, or at any rate a well drained soil, is to be regarded as valuable in relation to those accessory expedients before referred to, which it is desirable to adopt as far as practicable. A sandy soil, however, is not the only soil in which the plant will thrive, but it is usually a well-drained soil, and in that feature we may consider that its adaptation consists. We have before had under notice evidence that potato plants which have been sheltered, whether by a "currant" bush, or even by an "asparagus" plant, are unmistakably benefited thereby; and we have given an opinion as to the *modus operandi* of that benefit.

A most important communication has been received also from W. O. Bridgeman, Esq., of Bilton Hall, near Rugby, who tells us,

"It may not be uninteresting to some of your readers to know that during my residence in Austria some years ago, I only, of all my neighbourhood, succeeded in raising healthy crops of potatoes, by adopting a plan similar to that suggested in your article of the 24th instant. I made a circuit of about fifteen miles round my father's farm, burying half a sack here, and a sack there, of picked seed, then I planted in hitherto uncultivated grass land, mixing charcoal with the manure."

"The crops raised were perfect, and remained so for several seasons without change of seed."

Here, then, is a full practical exemplification of the importance and correctness of the remedies for disease in the potato, so fully described and insisted on in our former article on this subject. Further, Mr. Bridgeman's experience gives fair ground for assuming the possibility of rectifying the defects of the potato-plant much more speedily than was contemplated, and of securing a success much more signal and prompt than the writer ventured to anticipate. This experience, therefore, confirms the value of the remedies pointed out, and enables us to recommend the plans suggested with even more confidence, and on the best of all possible grounds, namely, that of actual experiment. A few such lessons, derived from experience, would really set at rest the question of the practicability of easily restoring the potato to its wonted health and vigour, and show every agriculturist how he has ever within his power the means of a successful cultivation of the potato whenever he think fit to adopt those means fairly and fully.

CONTEMPORARY SCIENCE.

WHEN describing a new description of gunpowder some weeks ago, we took occasion to remark that the author, Dr. Pohl, was mistaken if he imagined that its employment would ever be free from risk; and stated that, owing to the explosive nature of chlorate of potash when mixed with organic matter, innumerable accidents would attend its use. A contemporary has now gone out of its way to call in question the correctness of our deductions, and quotes Dr. Pohl's authority for stating that our fears are groundless. "Only," says he, "the heaviest stroke of iron upon iron is sufficient to produce an explosion, and it is impossible to ignite the powder by rubbing it between wood and metal, or between stones." Nothing can be plainer than this assertion. We, arguing upon the well-known properties of certain chemicals, said that their combination in the manner recommended must be attended with considerable danger. This is met with a flat contradiction, the inventor himself writing that our fears are entirely groundless, and expressing himself in such positive language, that no general reader could hesitate for a moment in concluding that we had made an egregious blunder, and that our scientific pretensions, equally with our arguments, were of a very second-rate character.

It is, then, with no small satisfaction, that we learn from a correspondent of the *Chemical News*, a high authority in matters scientific, that our apprehensions of its danger were, if anything, under-estimated. The writer, Mr. Hudson, states that he prepared different samples of white gunpowder according to the receipt given by Dr. Pohl, for some military engineering purposes: different processes were tried for effecting the mixture of the materials; but the products were all highly explosive by friction. In fact, one sample exploded in an open porcelain dish by simple friction with a spatula with which an assistant was crushing some of the larger pieces; through this explosion he nearly lost his eyesight and was laid up for some weeks. Mr. Hudson concludes by warning all experimenters with this powder not to compress it too violently for fear of accidents—a blow with a hammer proving sufficient to explode all samples which he has prepared. It is impossible to reconcile the accounts given by Dr. Pohl and by Mr. Hudson. All known analogies go to prove that this composition is, as Mr. Hudson has said, readily exploded by friction, and if further evidence were required we might mention that we also have made some of the mixture according to the most orthodox formula, when it turned out to be about as tolerant of friction as a lucifer match. So much for our contemporary's criticism on our remarks; so far everything goes to prove that what we said was perfectly correct, and that we rather under than over estimated the dangers likely to arise from the introduction of white as a substitute for black gunpowder.

The compound has, however, several good properties, which might doubtless be utilized, if proper precautions were taken; for instance, the powder is inflamed just as well by touching it with a drop of oil of vitriol, as by the application of a spark. This property might, perhaps, be applied to some advantage in the construction and preparation of bomb-shells for long ranges. They need only be filled with this powder, and have properly imbedded in the centre a glass tube containing a little sulphuric acid sealed up in it. When once the shell was charged and closed, the tube would remain unbroken under all ordinary or even rough usage; but upon striking an object with the force with which the mortar propelled it, the concussion would crush the internal tube and ignite the powder. No useless explosion could take place in the air, as is too often the case with the ordinary fusee shell. Even this property of the powder would only be of value if it were found to effect the desired object better than is done in the present percussion shells. In these the force of concussion with the object drives down a hammer on to some detonating (cap) powder, and we question whether a concussion which would be sufficient to smash the glass tube, would not equally well bring down the hammer with the necessary force on the fulminating powder.

When remarking, in a recent number, on the disadvantages of employing

white lead, we stated that habitual contact with compounds of this metal was liable to produce a very serious form of paralysis of the muscles. Not only will contact with lead paint produce this disease, but it is brought on by the constant handling of almost anything containing this metal. Dr. Eulenberg, of Cologne, now says that it is a well-known fact that in most manufactories in Germany, Belgium, France, and Switzerland, sewing-silk is impregnated with salts of lead, to give it hardness. In a chemical analysis of black silk, he found that it contained nearly eighteen per cent. of oxide of lead. This fact of the impregnation of silk with lead is important, when the habit is remembered which seamstresses and other persons engaged in similar pursuits have of holding silk in their mouths. A suspected sample of silk can easily be examined for lead. It is only necessary to burn a twist of it over a sheet of white paper into which the ashes are allowed to fall. Upon rubbing these with the finger minute glistening globules of lead will be separated, and may easily be identified with a pocket microscope.

SCIENTIFIC INTELLIGENCE.

PHOTO-ZINCOGRAPHS OF OLD RECORDS.

A review of Col. James's fac-simile of the Cornwall part of the famous Domesday Book appearing in another part of this paper, a few words may be said here on the process by which that faithful portrait, for it is really more than a transcript or copy, has been produced. Any one taking up the original book would find its pages very difficult to read, after nearly eight hundred years have dimmed and faded the once black ink with which it was written into a dull and dingy brown, sometimes, perhaps, too faint to be perused; but photography will reproduce in its sun-portraits the letters and inscriptions which the eye fails to make out. Here before us, then, we have a reproduction of what this part of the Domesday Book was when it was fresh from the penman's hands.

The pages have been photographed and transferred to a zinc plate, and the printer has etched it and printed it at once from the same without the aid of the artist's or engraver's skill.

Photo-lithography has been long known, though not much used. In 1858 Mr. Newton took out a patent for "an improved process for producing photographic pictures or designs on the surface of stone or metal, so that impressions may be taken therefrom by the process of lithographic printing." A lithographic stone was coated with a solution of gum, sugar, and bichromate of potash, and when the picture was printed on this the action of light acted on the gum and rendered it almost insoluble. The stone was then washed with a solution of soap, and by this and the washing away of the parts not affected by the light, a printed surface was formed.

M. Joubart and Colonel Wittert still earlier, in 1840, suggested methods for photo-lithographic printing, and many others have done the like since that period, but Col. James has adopted various modifications with very successful results.

He first obtains, by means of the camera, an ordinary photograph on wet collodion; this is printed by exposure on a sheet of sensitive paper, formed by washing over engravers' tracing-paper with a solution of gum-arabic and bichromate of potash. The picture so taken is then laid face down on a metal plate very evenly covered with a greasy ink, and passed through a lithographic press. It is then placed in a flat porcelain dish of warm water, and gently brushed with a soft brush, the ink being thus removed where it overlies the soluble gum, while it is retained on the parts constituting the picture. This "print" is then transferred to a polished zinc plate, and the transfer gummed and brought up by being rubbed over with printing ink and olive oil. When the details appear clear and strong, the plate is etched with a weak solution of phosphoric acid in gum water, and it is then ready for printing in the ordinary manner of a lithographic stone or zinc plate.

So it is the sun's beams and chemistry that have produced the perfect portrait before us.

PRESERVATION OF NATURAL HISTORY SPECIMENS.

M. Leprieur has employed arseniated alcohol for the preservation of such specimens, especially of insects. The animal tissues to be preserved are plunged into the liquor shortly after death, and the insects whilst still alive, or after suffocation by chloroform or ether vapour. M. Leprieur, who has successfully employed this method for several years, adds that the living insects are increased in weight about one-fourth after remaining in the liquid twelve hours, and that they retain in their organs quite enough arsenic to repel the attacks of larvae.

COMPRESSED COAL.

Under the name of compressed coal, a fuel has recently been brought out which possesses several points of interest. The process by which these blocks are obtained is inexpensive and without complication, while they only occupy one-third the space of ordinary coal; taking but 31 cubic feet to the ton, whilst raw coals average from 44 to 48 feet. The way in which they are made is as follows:—

In the first place, the pure coal-dust or slack is conveyed through a washing-machine for the purpose of disconnecting it from any stony particles it may contain. It is then subjected to a steady heat, until its bituminous parts are rendered quite soft, after which it is passed into a moulding machine. This comprises a rotary table containing the moulds, around which are situated three presses, namely, the feeder, for filling the moulds; the main press, for condensing the blocks; and the discharge which removes the block out of the mould, whence it falls into a travelling web, which carries it away. The presses act simultaneously, and between each stroke the table makes one-third of a revolution, by which the coal is removed from one press to another. An apparatus is provided for extracting the gases from the coal during pressure, ingeniously opening out the air passages at each stroke, which would otherwise become

incidental to oyster dredging cannot fail to yield instructive and entertaining occupation to those who interest themselves in the wonders of the shore.

To return to London, we may be allowed to state, by way of conclusion, that the oysters which are supplied in the shell-fish shops of the great metropolis are justly considered to be far inferior in flavour to those obtained at the sea-side, or in the taverns of Edinburgh. The "prepared" London oyster is quite a different animal from the real "native," as opened and eaten at a short distance from his bed, accompanied with a good mouthful of the water, in which he has been confined in his shell; in fact, he is "sophisticated" with oatmeal, which, if it allows of a gain in the way of fat, inflicts a severe loss in flavour. Brown bread and butter, lemon juice, vinegar, London stout, and chablis, are all well enough if one intends to dine or sup upon oysters and nothing more; but the true flavour of this animal is only obtained by eating it *au naturel*. To cook an oyster is utterly to spoil it, as an individual substance; of course it lends a rich flavour to a soup, or any other dish, but to enjoy the real thing in perfection it must be eaten raw, served up on its own shell, with its own liquor as the only sauce.

THE POTATO DISEASE AND ITS REMEDIES.

IN THE LONDON REVIEW for August 24th, we published an article on the above subject, which has attracted considerable attention, and we have received in relation to that article a number of communications of more or less interest, some of which we published last week, and the objections contained in which seem to require some further notice. To make our comments the more intelligible we will briefly enumerate one or two of the more prominent facts which the article referred to set forth. It was there shown for the first time by actual facts, that, antecedently to the true ravages of the disease itself, there is a state of inanition in which the peripheral substance of the tubers predisposed to the disease, is starved of its starches. The cells in this case, especially in the worst or most ill-nourished tubers, are, in the outer portion of the tuber, entirely empty of starch. In the healthy potato the case is different entirely. Though the peripheral or outer portion of all tubers must be regarded as at the remotest point of the circulation, as are the extremities in the animal; and though, moreover, in the tuber, it is possibly at the remotest point of nutritive agency, yet in the healthy tuber the cells invariably contain starches. Nay, starches have often been detected in the cells of the epidermis itself in a good sound tuber. Further investigations into the condition of diseased and predisposed tubers from other parts of the country, and made since the publication of the article referred to, have tended directly to confirm the facts and views there brought forward.

These facts, then, proving incontestably that the plants thus weakened or starved, either originally in constitution, or by some more or less partial failure of the nutriment furnished by the soil, from its having been too constantly used for the same plant during many years, or by both these conditions, the absolute necessity of a more natural mode of cultivating the potato was strongly urged. The essence of this method consisted in an annual change of soil, a selection of sets of the best quality and from different districts, with the other accessory or more common-place measures before referred to—in fine, a mode of cultivating the potato plant which is understood and acted upon, and proved, both by science and experience, to be beneficial and highly essential, in regard to all other important plants used as food by man.

One of our correspondents, however, has another view of the whole subject, and another remedy for the evils. We give his propositions in his own words. He says:—

"The manner of propagating the potato from tubers is essentially different from the ordinary mode of propagating plants from seed. Whenever a seed is sown there springs up a *new* plant; but when a tuber is sown, it is merely transplanting a portion of the original plant. In the one case we have a fresh life, in the other there is no new vitality."

He considers that when a plant has been grown from tubers instead of seed for fifty years, a single individuality has been fifty times transplanted, and observes—"Who then can wonder that its organism should become impaired, and that decay and disease should make their appearance?"

Our correspondent's conclusions are thus stated:—

"There is only one way of obtaining a new plant, and that is from the seed. When plants are raised from tubers, or trees from grafts or buds, it is not a new life that is obtained, but a continuation of a portion of the old one. When a graft is taken from a tree, it does not become a new tree, but merely a branch of the original stem. It is stated that several kinds of apples are becoming extinct, the Ribston pippin, for instance; and this might naturally be expected."

He thus conceives that "the natural mode of reproducing plants is from seed; but, in the case of the potato, several years must be lost before a full sized tuber can be obtained."

Such are the views of one correspondent, but these views contain several grave misapprehensions, as we will proceed to show. In the first place, not much scientific knowledge would have been required to make him acquainted with the fact that there is more than one *natural* mode of obtaining a new plant. The seed, therefore, is not the only method of a natural reproduction. There are at least three. If he will take a full-grown bulb of garlic and peel off the tunic, he will find at the base a whole crop of young bulbs, feeding when in a state of growth upon the maternal substance, and sheltered like the chickens beneath the maternal wing, and by the body of the hen. These "cloves," technically so called, are intended by nature to assume an independent life. The same fact will be shown in the case of the hyacinth, the base of its bulbs, when mature, being surrounded by a new generation and independent future progeny. Again, in the bulbiferous lily and some other plants a bulbous progeny is developed even upon the stem in the axils of the leaves. These young bulbs will fall off when ripe, and become new and independent plants. As if to make nature's resources intensely evident in this very matter, we have a crop of reproduced young in the shape of bulbs at the very apex of the stem,—the place generally occupied by the organs of fructification. This most remarkable arrangement is seen in a plant termed familiarly the free onion, which bears on the summit of its stem the crop of young bulbs instead of flowers, capsules, and seeds. Here, then, is one natural method of reproduction entirely distinct from that of seed. We

need not go into the other methods, as not being immediately connected with the object we have in view.

Now, in a strictly natural or scientific sense all these young bulbs are *buds*, and bear an exact analogy to the buds and growing points in the potato tuber. Our correspondent's idea, therefore, that propagation by tubers is essentially the same as that means of prolonging an individual tree or variety by grafting, seems a misapprehension. The system of grafting is purely artificial, the other mode is as purely natural. One is provided by nature alone, and endowed with independent powers of future existence and development; the other is a mere artificial and temporary expedient for prolonging the life of a single plant or variety. One is a distinct, complete, and perfect being; the other is a compound, half old and half new.

This is not the only serious error of our correspondent. The statement that we can secure a healthy plant from seed, or the inference drawn, is equally questionable. Can we expect a healthy progeny from weakly or diseased parents in the animal world, or in man? We all know the contrary fact. Does the farmer select seed from a strong and vigorous, or from a weakly and delicate plant? Seeds as well as tubers are endowed with the peculiar features and qualities of the plants that produced them, whether these be good or bad. We shall see at once that the inference proves that not the slightest confidence can be placed in any such expedient as that suggested, for, in the vegetable kingdom just as in the animal, the time for improvement, and even for keeping up the vigour of the organism—for acquiring, just as for preserving, a healthy constitution, is the *period of active life*, and that only. The drawbacks on using seed in potato growing, instead of tubers, apart from all this, would be most serious.

The selection and use of healthy bulbs and seeds in regard to plants in general, and of healthy tubers in the potato, is one common element of success; but it does not affect the question in the slightest degree as between the seed and the tuber. Good seed in general, and good tubers, are requisite to begin with. They will produce healthy plants at the season of maturity, only when the other conditions of life, health, and vigour shall be super-added.

It must be thus manifest that the potato tuber is to be considered as capable of reproducing the species as the seed. It is besides far more convenient, and no doubt intended to be such by nature. It affords compensation for certain acknowledged shortcomings as to production by the seed, and we may assume, was designed so to do by an all-wise and gracious Providence, just as in other cases which might be pointed out, if space permitted.

Another correspondent, writing from Shropshire, and giving us an account of his personal experience, says:—

"I find in page 636 of the 'Panorama of Science and Art' (published many years ago, but without a date), the following remark:—'Potatoes are often extensively injured by the curl, a disease in which their leaves shrivel up, and the cause of which, unless a general effect of the weak state of the plant, is not yet discovered. The best modes of guarding against [the disease] consist in using seed from distant districts, and in promoting the health of the root by careful culture.'

"I observed, in the year 1847, a kind of blight which appeared to have struck my orchard trees, in a current of about 4 to 6 feet broad; in the same direction, by following the supposed current, I found the gooseberry and currant bushes similarly affected. Still following the direction of the said current, I found the potato haulm similarly affected. The potatoes very soon became diseased as far as the supposed current of blight had passed. This was after a series of thunderstorms."

He further adds:—"I also noticed that in the immediate vicinity of a tall weed, as an asparagus plant, the potatoes escaped;" and asks, "Is the disease caused by the electrical state of the atmosphere?"

It does not appear to us that there is any mystery here whatever. No doubt lightning, or an electric current of less intensity, is quite capable of inflicting even much more serious injuries on orchard trees, gooseberry trees, and potato plants indiscriminately than our correspondent relates; but a *great depression of temperature*, favoured and promoted by wet, and accompanied into the bargain with a current of biting wind, is of itself sufficient to kill parts of trees, and especially leaves and young shoots, while few plants of lax tissue, like the potato stem, could bear such a current without serious, sometimes fatal injury. Under such circumstances premature decay in the potato, especially when predisposed to it by any external cause, is just what we might expect. There is thus no necessity to resort to any *imaginary* current of electricity. We have a potent and known cause without it, and we have, besides, fair internal evidence of its absence. A potato plant which is *sheltered*, if even by a gooseberry bush or an "asparagus plant," or by any other means, will often escape injury, while a current of electricity would certainly not spare any plant in its course, in such conditions.

We have no scientific evidence of the condition of the tubers in what was formerly described as "curl" in potatoes. The leaves being curled up and their functions destroyed, growth and nutrition became impracticable. The tubers, being extremely small, showed at least an arrest of development, growth, and nutrition. As the nutrition of a plant depends essentially upon the functions of the leaves, and progresses also in absolute proportion only to the number, life, and health of those leaves, we expect growth and nutrition, or arrest, and perhaps decay, just in conformity with the conditions which those leaves present in all the various cases. This is amongst the best-established laws of vegetable nutrition.

A correspondent in Ireland seems to suppose we considered the potato plant independent of atmospheric influences. We certainly intended to lead our readers to an entirely opposite conclusion.

Another correspondent writes from Birmingham:—

"In the last number of your paper, when writing on the potato, you gave us a subject in which we are all interested. Whatever the real cause of the potato disease may be, it is generally admitted that a dry sandy soil suits it best, as the following homely experience proves. This year a Bridgenorth gentleman, when planting some potatoes in his garden, placed three of them under the shade of a large currant bush which happened to be at the end of one of the rows. The stems and tubers of these potatoes, when dug up, were all diseased, with the exception of the three aforesaid sheltered plants, which were perfectly unblemished."

We may not easily perceive how our correspondent obtains his conclusions

from his premises, but at the same time there can be no doubt that a comparatively dry, or at any rate a well drained soil, is to be regarded as valuable in relation to those accessory expedients before referred to, which it is desirable to adopt as far as practicable. A sandy soil, however, is not the only soil in which the plant will thrive, but it is usually a *well-drained* soil, and in that feature we may consider that its adaptation consists. We have before had under notice evidence that potato plants which have been sheltered, whether by a "currant" bush, or even by an "asparagus" plant, are unmistakably benefited thereby; and we have given an opinion as to the *modus operandi* of that benefit.

A most important communication has been received also from W. O. Bridgeman, Esq., of Bilton Hall, near Rugby, who tells us,

"It may not be uninteresting to some of your readers to know that during my residence in Austria some years ago, I only, of all my neighbourhood, succeeded in raising healthy crops of potatoes, by adopting a plan similar to that suggested in your article of the 24th instant. I made a circuit of about fifteen miles round my father's farm, burying half a sack here, and a sack there, of picked seed, then I planted in hitherto uncultivated grass land, mixing charcoal with the manure."

"The crops raised were perfect, and remained so for several seasons without change of seed."

Here, then, is a full practical exemplification of the importance and correctness of the remedies for disease in the potato, so fully described and insisted on in our former article on this subject. Further, Mr. Bridgeman's experience gives fair ground for assuming the possibility of rectifying the defects of the potato-plant much more speedily than was contemplated, and of securing a success much more signal and prompt than the writer ventured to anticipate. This experience, therefore, confirms the value of the remedies pointed out, and enables us to recommend the plans suggested with even more confidence, and on the best of all possible grounds, namely, that of actual experiment. A few such lessons, derived from experience, would really set at rest the question of the practicability of easily restoring the potato to its wonted health and vigour, and show every agriculturist how he has ever within his power the means of a successful cultivation of the potato whenever he think fit to adopt those means fairly and fully.

CONTEMPORARY SCIENCE.

WHEN describing a new description of gunpowder some weeks ago, we took occasion to remark that the author, Dr. Pohl, was mistaken if he imagined that its employment would ever be free from risk; and stated that, owing to the explosive nature of chlorate of potash when mixed with organic matter, innumerable accidents would attend its use. A contemporary has now gone out of its way to call in question the correctness of our deductions, and quotes Dr. Pohl's authority for stating that our fears are groundless. "Only," says he, "the heaviest stroke of iron upon iron is sufficient to produce an explosion, and it is impossible to ignite the powder by rubbing it between wood and metal, or between stones." Nothing can be plainer than this assertion. We, arguing upon the well-known properties of certain chemicals, said that their combination in the manner recommended must be attended with considerable danger. This is met with a flat contradiction, the inventor himself writing that our fears are entirely groundless, and expressing himself in such positive language, that no general reader could hesitate for a moment in concluding that we had made an egregious blunder, and that our scientific pretensions, equally with our arguments, were of a very second-rate character.

It is, then, with no small satisfaction, that we learn from a correspondent of the *Chemical News*, a high authority in matters scientific, that our apprehensions of its danger were, if anything, under-estimated. The writer, Mr. Hudson, states that he prepared different samples of white gunpowder according to the receipt given by Dr. Pohl, for some military engineering purposes: different processes were tried for effecting the mixture of the materials; but the products were all highly explosive by friction. In fact, one sample exploded in an open porcelain dish by simple friction with a spatula with which an assistant was crushing some of the larger pieces; through this explosion he nearly lost his eyesight and was laid up for some weeks. Mr. Hudson concludes by warning all experimenters with this powder not to compress it too violently for fear of accidents—a blow with a hammer proving sufficient to explode all samples which he has prepared. It is impossible to reconcile the accounts given by Dr. Pohl and by Mr. Hudson. All known analogies go to prove that this composition is, as Mr. Hudson has said, readily exploded by friction, and if further evidence were required we might mention that we also have made some of the mixture according to the most orthodox formula, when it turned out to be about as tolerant of friction as a lucifer match. So much for our contemporary's criticism on our remarks; so far everything goes to prove that what we said was perfectly correct, and that we rather under than over estimated the dangers likely to arise from the introduction of white as a substitute for black gunpowder.

The compound has, however, several good properties, which might doubtless be utilized, if proper precautions were taken; for instance, the powder is inflamed just as well by touching it with a drop of oil of vitriol, as by the application of a spark. This property might, perhaps, be applied to some advantage in the construction and preparation of bomb-shells for long ranges. They need only be filled with this powder, and have properly imbedded in the centre a glass tube containing a little sulphuric acid sealed up in it. When once the shell was charged and closed, the tube would remain unbroken under all ordinary or even rough usage; but upon striking an object with the force with which the mortar propelled it, the concussion would crush the internal tube and ignite the powder. No useless explosion could take place in the air, as is too often the case with the ordinary fusee shell. Even this property of the powder would only be of value if it were found to effect the desired object better than is done in the present percussion shells. In these the force of concussion with the object drives down a hammer on to some detonating (cap) powder, and we question whether a concussion which would be sufficient to smash the glass tube, would not equally well bring down the hammer with the necessary force on the fulminating powder.

When remarking, in a recent number, on the disadvantages of employing

white lead, we stated that habitual contact with compounds of this metal was liable to produce a very serious form of paralysis of the muscles. Not only will contact with lead paint produce this disease, but it is brought on by the constant handling of almost anything containing this metal. Dr. Eulenberg, of Cologne, now says that it is a well-known fact that in most manufactories in Germany, Belgium, France, and Switzerland, sewing-silk is impregnated with salts of lead, to give it hardness. In a chemical analysis of black silk, he found that it contained nearly eighteen per cent. of oxide of lead. This fact of the impregnation of silk with lead is important, when the habit is remembered which seamstresses and other persons engaged in similar pursuits have of holding silk in their mouths. A suspected sample of silk can easily be examined for lead. It is only necessary to burn a twist of it over a sheet of white paper into which the ashes are allowed to fall. Upon rubbing these with the finger minute glistening globules of lead will be separated, and may easily be identified with a pocket microscope.

SCIENTIFIC INTELLIGENCE.

PHOTO-ZINCOGRAPHS OF OLD RECORDS.

A review of Col. James's fac-simile of the Cornwall part of the famous Domesday Book appearing in another part of this paper, a few words may be said here on the process by which that faithful portrait, for it is really more than a transcript or copy, has been produced. Any one taking up the original book would find its pages very difficult to read, after nearly eight hundred years have dimmed and faded the once black ink with which it was written into a dull and dingy brown, sometimes, perhaps, too faint to be perused; but photography will reproduce in its sun-portraits the letters and inscriptions which the eye fails to make out. Here before us, then, we have a reproduction of what this part of the Domesday Book was when it was fresh from the penman's hands.

The pages have been photographed and transferred to a zinc plate, and the printer has etched it and printed it at once from the same without the aid of the artist's or engraver's skill.

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choked by the bitumen. In these presses, necessarily of a very powerful description, breakages would be always occurring, but for a provision which has been made by the fulcrum of the levers of the main press resting on the ram of an hydraulic press, the safety valve of which is loaded only to the extent that the strength of the machine will bear.

Each machine, which is inexpensive in construction, is capable of making 20 tons per day, at an estimated cost of 25s.

HAY'S WATERPROOF GLUE.

In addition to the particulars given in a recent number of the LONDON REVIEW, a few more facts connected with this valuable discovery have come before our notice. Its principal ingredient is Trinidad pitch or asphalt, which is mixed with vegetable tar and oil naphtha, or a suitable substitute. The best proportions for the ingredients are—Trinidad pitch, or asphalt, 60 lbs.; vegetable tar, 15 lbs.; oil naphtha, 2 lbs. Instead of the oil naphtha, 4 lbs. of oil of turpentine may be used. When it is required to pack the composition, and send it out for use, and where it may be expected to require remelting and long exposure to heat in the melting-pots while being used, an additional $\frac{1}{2}$ lb. of oil naphtha, rough creosote, or oil of turpentine is recommended by the inventor to be added.

TELEGRAPHING BY SOUND.

In the "Telegraph Manual," by T. P. Shaffner, of Kentucky, there occurs the following eloquent passage respecting telegraphing by sound:—"Of all the mysterious agencies of the electric telegraph there is nothing else so marvellous as receiving intelligence by sound. The apparatus speaks a language, a telegraphic language, as distinct in tone and articulation as belongs to any tongue. The sound that makes the letter is as defined in one as it is in the other. The operator sits in his room, perhaps some ten feet from his apparatus, and he hears a conversation held by two others hundreds of miles distant, and perhaps the persons conversing are equally far apart. He hears every word; he laughs with them in their merriment, or perhaps sympathizes with their bereavement. The lightning speaks and holds converse with man. What can be more sublime?"

THE RIGHT TO PHOTOGRAPH THE EXHIBITION BUILDING.

A very questionable principle has just been recognized by the Commissioners of the approaching Exhibition. An invitation for tenders for the right to photograph the building up to the 12th February, 1862 (when a fresh tender will have to be made), was advertised in the daily papers. In answer to this several eminent firms in London offered considerable sums, but a foreign house, Messrs. Bernstingl, in answering the invitation, sent an offer, not to give any definite sum, but to double the highest tender made by any other firm whatever. We consider that, in granting the licence to this firm upon such an offer, the Commissioners have adopted a very injurious principle, which, if allowed to pass into a precedent, will bid fair to put a stop to all fair estimates in such matters; for what will be the use of firms going to considerable trouble, and some expense, in complying with the conditions of tender, when it is open to anyone else to outbid them, by offering 5 or 10 per cent. more or less (as the case may be) than the sum they have sent in? Working by tender will, if such a precedent be admitted, degenerate into a mere gambling transaction, in which the most unscrupulous and reckless trader will be most likely to win, to the exclusion of better firms, who will soon cease to compete in such matters.

INDIA-RUBBER VARNISH.

That india-rubber dissolved in various liquids yields good varnishes is well known; but in general they are too viscid for delicate purposes, and are only good for making stuffs waterproof. India-rubber liquified by heat, dissolved in oil of coal-tar, or drying linseed-oil, does not give a varnish of sufficient fluency, or free from smell. Moreover, a considerable quantity of india-rubber remains undissolved in a gelatinous state, suspended in the liquid, so that the solution is never clear. Dr. Bolley has recently published some remarks on this subject which may be useful. If india-rubber be cut into small pieces, and digested in sulphuret of carbon, a jelly will be formed; this must be treated with benzine, and thus a much greater proportion of caoutchouc will be dissolved than would be done by any other method. The liquid must be strained through a woollen cloth, and the sulphuret of carbon be drawn off by evaporation in a water bath; after which the remaining liquid may be diluted at will with benzine, by which means a transparent but still yellowish liquid will be obtained. A more colourless solution may be prepared by digesting india-rubber cut into small pieces for many days in benzine, and frequently shaking the bottle which contains it. The jelly thus formed will partly dissolve, yielding a liquid which is thicker than benzine, and may be obtained very clear by filtration and rest. The residue may be separated by straining, and will furnish an excellent waterproof composition. As for the liquid itself, it incorporates easily with all fixed or volatile oils. It dries very fast, and does not shine, unless mixed with resinous varnishes. It is extremely flexible, may be spread in very thin layers, and remain unaltered under the influence of air and light. It may be employed to varnish geographical maps or prints, because it does not affect the whiteness of the paper, does not reflect light disagreeably as resinous varnishes do, and is not subject to crack or come off in scales. It may be used to fix black chalk or pencil drawings; and unsized paper, when covered with this varnish, may be written on with ink.

HATCHING YOUNG OSTRICHES.

Since the French occupation of Algeria ostriches have been conveyed thence to France in great numbers; but, until the instance now to be recorded, a brood had never been produced in France. It is very difficult, under the necessary restraint of a zoological garden, to supply the necessary conditions for bringing about this result. The attempt had been frequently made to do so in the Zoological Gardens of Marseilles, but as frequently failed. Even last year, notwith-

standing the care devoted to the ostriches in that establishment, and though eggs were laid in plenty, no young ostriches could be hatched. The director, M. Suquet, however, was not to be foiled. Failing to accomplish what he desired in the gardens, he bethought himself of trying what could be done out of them. In the territory of Montredon he selected a sandy plain, situated between the sea and the mountains which form the south-east of the Gulf of Marseilles. The spot belongs to M. Pastre, who kindly gave the necessary co-operation. There a large secluded valley was fixed upon, sufficiently wooded to afford shelter without intercepting the sunshine necessary for quickening the eggs. After having enclosed a space 600 metres long by 500 wide, the birds were conveyed to their hatching ground on March 2 of this year. For a few days the birds seemed to regard their new quarters with suspicion, and ran anxiously about. Soon, however, they settled themselves and began laying. Their nest was at first a simple excavation in the sand, in the form of a truncated cone. Gradually the borders of this hole were heightened by accumulations of more sand. At this labour the male and female bird worked alternately. A few hours after the completion of the nest laying began, and was continued every alternate day, until by the 20th of April fifteen eggs had been deposited. Up to this time the hen guarded the nest a few hours before and after incubation, sometimes for a whole day. After April 20, however, the male bird commenced taking his spell of watching, the lady only seeing to the household during periods when her lord and master was temporarily absent from home. All seemed to go on satisfactorily. According to observations made by M. Hardy, at Algiers, the time of incubation should be from fifty-six to sixty days. Knowing this, M. Suquet was surprised when, on June 3, intelligence came that the first young ostrich had opened its eyes to sunshine on French soil. By the evening eleven had been hatched. On the day following the young birds left the nest and began to wander over their enclosure, guided alternately by papa and mamma, who spared no trouble in this their first walking lesson. During these excursions one bird always lingered a little behind. It was weak, and soon died, thus reducing the number of the young family to ten. They went on growing rapidly, so that by the 8th of last month (August) they were as big as young turkeys, giving every promise of arriving in due time at years of discretion, and contributing for many a season to the *grande tenue* of many a fair Parisienne.

ASTRONOMICAL INTELLIGENCE.

THE COMET.

The following ephemeris has been calculated by M. Seeling, for the Berlin mean midnight of the undermentioned dates:—

		R.A.	Decl.	Distance from Earth.	Brightness.
		h. m. s.		Miles.	Sept. 1 = 1.0
Sept. 21	...	15 50 26	42 5.5	102,850,000	0.48
22	...	16 0 46	42 2.7		
23	...	16 2 6	42 0.0		
24	...	16 3 27	41 57.5		
25	...	16 4 49	41 55.0		
26	...	16 6 10	41 52.7		
27	...	16 7 31	41 50.5	202,350,000	0.39

Inverness, September 17th, 1861.

NOMENCLATURE OF THE SMALL PLANETS.

At the Academy of Sciences, recently, M. Leverrier read a paper on the above subject. Astronomers have hitherto been in the habit of giving each of the telescopic planets a name, such as Flora, Vesta, Doris, &c. M. Leverrier asks whether it would not be better to mark them with the number denoting the order of their discovery, and add to this the name of the discoverer, thus, for instance—(8) Hind; (40) Goldschmidt; (63) Gasparis, &c. This system of nomenclature had been objected to by Mr. Hind, on the ground that astronomers would be confused by the juxtaposition of numbers and names; M. Leverrier, on the other hand, in defence of his plan, asks whether astronomers believe that the number of small planets is limited, or the contrary? If limited, the present system may be persisted in; but if unlimited, it must in the end be abandoned, and in that case the sooner the better.

M. Biot communicated two letters from M. Valz, honorary director of the Observatory at Marseilles, in which he repeats his assertion that the earth passed through the comet's tail on the 30th of June last, and in support of this opinion computes the position of the tail, the situation of the earth, &c. It is a curious fact, that on such a mathematical question as the inclination of a comet's tail, and the position of that body and the earth at a given moment, there should be two, and even three opinions; for our readers must recollect that Messrs. Hind, Lias, and Valz all admit that the comet's tail swept the earth, but neither agree as to the hour or the day; while M. Leverrier has cast great doubts upon the occurrence.

CORRESPONDENCE.

SCHEDULE D: ITS PRINCIPLE.

To the Editor of "The London Review."

SIR,—The Select Committee of the House of Commons, appointed, on the motion of Mr. Hubbard, to inquire into the present mode of assessing and collecting the income-tax, has published its report. They have come to two decisions: first, they have rejected the plan proposed by their chairman, for amending the levy of the tax as unsatisfactory, declining also, on their own account, to offer any suggestion for its improvement, on the ground of the danger "of unsettling the present basis of the tax, without a clear perception of the mode in which it is to be reconstructed;" and, secondly, they have further deduced, from the repeated failures to re-adjust the imposition of the tax, the conclusion that "the objections which are urged against it are objections to its nature and essence, rather than to the particular shape which has been given to it."

Now, Sir, I hold both these judgments to be eminently sound and just, and earnestly hope that the careful examination which the committee has given to

this subject, and the ability which was manifested in the discussions which took place upon it, will put an end to the long fruitless agitation with which the equality of rate on all incomes of whatever kind has been attacked.

These debates have displayed a striking example of a fallacy which plays a very large part in human affairs, and spoils every day an incredible quantity of excellent reasoning. There has been a *petitio principii* throughout; the question at issue has been begged from the very first. The clever advocates for a change have repeated the ingenious labours of the Royal Society, who, as all the world knows, worked away for days to find an answer to the question propounded by Charles II., why a dead fish weighed heavier than a live one, till one of the members bethought himself of weighing the two fishes, and so discovered how they had been played upon by the wit of the monarch. Identically the same process has been renewed in respect of Schedule D. Professional men and traders discovered that they had a chance of escaping a portion of the burden laid upon them by the law, exactly as the payers of tithes in Ireland and church-rates in England; and the actuaries were delighted to obtain a charming field for the exercise of their subtle talent and refined calculations. Both these classes at once took up the ground, which, strange to say, has never been actively disputed by the public.

Those who were assessed under that hated Schedule assumed that the proposition was too obvious to require proof, that terminable and precarious incomes could not in justice be required to pay the same rate as permanent revenue, and they mystified the world with computations and schemes so elaborate as to make all men lose sight of the fact that these volumes of figures were trying to arrange what had never been shown to require arrangement; that they were in a manner discoursing on what sort of wings men should have, and how they should use them, before they had learnt whether it was intended that men should ever fly at all.

It is fortunate for the interests of justice and of the national revenue that every one of these projects has been proved in succession to be impracticable. Could a single one have been worked, the vast influences of the trading element in the constituency of the House of Commons would, one can scarcely doubt, have forced its enactment into law. The Select Committee threw up the attempt in despair; it could not be done; and they are right, not only because no one has had the luck to stumble upon the practicable plan, but because every plan must be impracticable,—not by accident, but from the very nature of things. The instant that the barrier is opened for the admission of a reduced rate on Schedule D, a deluge of iniquities and difficulties would burst in, as disastrous as the breaking in of the Northern Ocean through the broken dykes of Holland. The traders and professional men have failed to produce a feasible scheme, the actuaries have failed, and so has the Select Committee, because no plan can be suggested which does not involve some principle incapable of bearing the test of experiment for a moment; the vice contained in the design itself must of necessity produce a huge crop of evils in practice, and at last get shipwrecked on the hard rocks of actual life.

Two men enjoy an income of £1,000 a year each; one derives his money from the rent of an estate, the other from the profits of a shop, or a living, or a medical practice, or the bar. "Manifestly, undeniably," cries the latter, "it is unjust to tax me with the same income-tax as the other man. My income ceases with my life, or depends on a fluctuating trade, or my health, or my popularity. I may be well-off to-day, but I may be a beggar to-morrow, through no fault of my own. I must provide against the evil day; I must save for ill-health, old age, and my children; and these are burdens from which my neighbour is exempt." The usual reply given to this demand is, that, if the income is temporary, so will be the tax; one income will pay only so long as it lasts, the other must pay for ever. This argument is unanswerable, but it does not silence the traders; it is too mathematical, too abstruse for the world at large. We, therefore, ask, what does the language we have quoted amount to? Is it not plainly this that one is poorer, less rich than the other, and therefore ought to pay less,—less rich, not because he has less money, but because he is compelled by the circumstances of his own personal position to spend a portion of it, at least, in a particular way? This is a principle new to English law, foreign to its spirit, unrecognized hitherto, and if recognized now, full of the most alarming dangers to society.

The law of England has never told a poor man that he should pay a smaller proportionate tax, whether on his income or the article he consumes, because he is a poorer man; and, if it were ever to give admission to such a principle, it would place property, savings, and civilization at the mercy of the poor and the ignorant. Such a doctrine would admit of unlimited application in practice; it could not be restricted to the income-tax. The fundamental fallacy of the demand for a reduced rate on Schedule D—the poisoned fountain from which all the troubled waters flow—is the false notion that the word income in the income-tax means, not the number of pounds which a man realizes each year under the protection of the law, but something else,—his spare means, his resources for enjoyment, his relative riches, relative in respect of the manifold elements of his individual position, his power of spending at his pleasure, as each man determines for himself on making up his books at Christmas, or takes a sanguine or gloomy view of his health or the prospects of his business. How is it possible for the English, or any other law to make a valuation of these things? How can it accept and act upon a definition of riches which does not measure them by their amount in money, but estimates them for each individual man, according as he is likely to thrive and be strong or the reverse, or has many or few children, or has an old aunt who may or may not leave him a fortune, or has a shop which may or may not be ruined by the approach of a railroad, or has got a good practice at the bar, or among sick patients, and may or may not be superseded by some one cleverer than himself?

How can the law, or the officers of the revenue, enter into these things? Yet they must be gone into ultimately and taken into account, the instant that one single element of a man's personal position, such as the tenure or the quality of

his income, is adopted as a ground for relief from taxation. It would be as impossible as it would be unjust to take some things into consideration and to leave out others; to charge 9d. on a widow's mite of £200 a year in the funds, and to let off with 6d. the physician or the Attorney-General, whose income reaches £10,000. Mr. Hubbard and the actuaries persevere in trying to escape the difficulty by instituting broad classes and general distinctions, but the attempt ever will be a failure; the fault lies in the principle, and is incurable. As soon as the calculator abandons the plain definition of money in pounds, and passes over to riches determined by circumstances, either of person or property, he is swamped at once, and carried away by the deluge; life varies every man's position infinitely, and wealth, measured by the claims of saving, education, prudence, and contingencies, is absolutely and hopelessly undefinable. The only possible process under such a doctrine would be that formerly practised in Turkey, where the aggregate assessment imposed on the village was notified to its chiefs, who convened its inhabitants and allotted to each man individually his proportionate share. Every man passed under review, every circumstance of his position was taken into account, his age, his strength, the size of his family, the success of his crops, the wealth of his kindred, and his expectations, and then with the assent of the whole assembled community he was taxed, as Mr. Bright and the traders would say, according to his means.

But even if it were otherwise: if the actuaries could succeed in producing a plausible classification, which should make reasonable allowances for the necessity of saving and other contingent burdens, the danger and unsoundness of the principle would only become more patent. In this matter of saving, one rich man only has been thought of in comparison with another; the mass of the community, who perforce are non-savers, is wholly forgotten. The shopkeeper and the barrister insist that they must lay by to make provision for their children; they cannot neglect the duty of maintaining their station in life. But upon what principle are we to justify to the working-man, the peasant, the owner of small means which preclude all thought of saving; the bulk of mankind, of high classes as well as low, who are obliged to live *de die in diem*, a regulation which compels them to pay more for their beer, their tea and sugar, the horse they are compelled to use, the wine which sustains long and sleepless nights of care or toil, in order that the children of some of their neighbours, men whom the hypothesis describes as having a surplus, may not descend to a lower station? What principle has made the families or the old age of these favoured men a charge on the whole community? This plea of the necessity of putting by and saving, is fraught with the deepest injustice and inequality. If a man is not rich enough to save for his family, it is a misfortune; but it is one which he shares with millions, and which assuredly furnishes no reason why the comforts of all around him should be abridged, in order that the ease of his advanced years or the *status* of his children may be raised above the level of others. A law which worked out such awards would be the parent of disloyalty to our institutions, and the fomentor of revolution.

But this is not all. This new principle, which people are seeking to engraft on English legislation, hides in its bosom a poison, which would entail consequences little dreamed of—its very essence is Socialism. The feeling which lies at the bottom of these efforts to procure exemption for Schedule D, and which gives them strength and endurance, is the desire to tax riches, as such—to make the rich contribute to the maintenance of the State more in proportion than the comparatively poor—to introduce into England a graduated system of taxation. The advocates of this system fasten on the word income, and abandoning the plain sense of the money realized, define it in such a way as to import into English finance the doctrine of taxes assessed according to wealth. This is the principle adopted by Solon, and called by the Greeks a timocracy. The English law abhors it. It exists in no part of our social system. The man with ten thousand acres pays the same land-tax, proportionately as the man with fifty. The owner of a palace pays the same tax to the poor-rate as the inhabitant of a cottage. A great duke, a Queen's Counsel, a physician, a shopkeeper, and an artisan, drink, individually, the same quantity of tea, and pay the same sum to the revenue. A fine on wealth, a penalty affixed on success and saving, the idea that riches are a crime and must be atoned for, are strangers repugnant to the English constitution. Yet these are the novelties, the insidious and poisonous leaven, which the clamourers for a reduced Schedule D are inserting into the healthy system of English finance; this is the fatal meaning, wrapped up under their angry language, that traders cannot afford to pay as much as those who possess realized property, and that equal rates are unjust. There is no force, no sense in their words, except under that doctrine—that they are not so rich, and therefore ought to pay proportionately less. History tells us what these doctrines effected at the French Revolution; our own memories remind us of the panic which they spread over French society in 1848, and of the armed peasants, men and women, who marched to Paris to protect property; and writings on every side warn us how passionately and how obstinately their votaries cling to these ideas. The Select Committee, by their decided language on the principle of the objections raised against equality of assessment, have rendered a service to England and to society everywhere far greater than they probably were aware of; they have not only rejected unpractical and unworkable schemes, but they have barred the way against confiscation, against the appearance in English law of a principle, to the ravages of which no limit can be assigned, and which would enable selfish and ignorant agitators to incite the poor to trample under foot the complicated and refined, but just and impartial organization of English civilization.—Yours, &c.,

A CONSTANT READER.

AEROLITES.

SIR,—With respect to the well-known fall of an aerolite, near Cirencester, which took place August 4th, 1835, alluded to by Mr. Wood, of Weston-super-Mare, in your paper of the 7th inst., it is desirable to state that it was not what is generally called a meteoric iron, but a meteoric stone, having a specific gravity of about 3.4.

as compared with water. The fall of these stones, which are generally arenaceous, though containing many small particles of nickeliferous iron visibly interspersed, are by no means of rare occurrence; in fact, it is well known that several such falls take place annually in Europe and the United States. Not less than 7 cwt. of stones fell in Ohio, U.S., last year, on May 1st, and one of these stones was an entire fragment, covered with a black crust, and weighing no less than 105 lbs. This fall was, of course, accompanied, as is usual in such cases, with much light and noise. But with respect to the fall of iron masses having a specific gravity of 7.0 to 8.0, these are of very rare occurrence. Since the Agram fall, in Croatia, on May 26th, 1751, there are only three authentic ironfalls described: one occurred 14th July, 1847, at Brannam, in Bohemia, when two masses, weighing 42 lbs. and 30 lbs. respectively, fell to the ground and were picked up; one, of 9 lbs., in Tennessee, U.S., fell July 30th, 1835; and the third, a very large mass of several feet in diameter, fell in January, 1844, at Corrientes, in Brazil. Large masses of iron, certainly of meteoric origin, have occasionally been found in different parts of the world, as in Mexico, South America, Siberia, &c., occasionally weighing several tons, and lying on the surface of the soil.—Yours obediently,

R. P. GREG.

Attwood Lodge, Prestwich, near Manchester, Sept. 11, 1861.

ANOTHER METEOR.

SIR,—On leaving Dunkerque Harbour at daybreak on Wednesday, the 11th instant, a meteor of extraordinary size and brilliancy shot across the heavens in an easterly direction; but, contrary to the usual appearance of these phenomena, this one left a line of stars in its train, instead of a line of light, and which remained visible several seconds. After making an arc of about 40°, it burst, when a shower of shining gold seemed falling towards the earth; its apparent size was about half that of the moon's, and of a bright blue colour, but the line of stars and the shower was of the colour of gold. Within a short time after its appearance, we had a sand storm, which was immediately succeeded by heavy rain. I write you in the hope that others, who may have seen it, will give their account of its appearance.

I unfortunately did not collect any of the sand which fell, but from its appearance should say it was siliceous. I think, from the short time which elapsed between the appearance of the meteor and the sand storm, that it was not caused by the former, although I imagined it might be so at first.

I am, Sir, yours respectfully,

Shooter's-hill, Sept. 12, 1861.

THOMAS CLARKE.

MILTON AND GENESIS.

SIR,—I think your correspondent "E. B." has misapprehended Gen. ii. 5, 6, from having taken only the latter half of verse 5, and disregarded the preceding half. It would not be allowable with respect to any modern writing to separate a clause beginning with "for" from what goes before, and the Book of Genesis will not bear a different treatment. The entire sentence states, first, that God "made every plant of the field before it was in the earth, and every herb of the field before it grew," and then, in connection with this statement, is added, "for God had not caused it to rain on the earth, and there was not a man to till the ground." Clearly the purport of the passage is to distinguish a creative operation from both a natural and a manual operation, and to assert the antecedence and independence of the first. The conjunction "but," at the beginning of verse 6 (which, in the Septuagint, is *δὲ*, not *ἀλλὰ*), has no reference to the distinction between "mist" and "rain," the sentence simply announcing the commencement of a natural operation, by which the growth of plants is maintained, namely, the rise of mist from the earth, which is the *fons et origo* of the means of growth, whether the immediate action be by dew or by rain. Now, in this narrative, there is nothing contradictory to the idea that the exhalation of mist and fall of rain took place anterior to the creation of man, and Milton is, therefore, not at variance with Genesis. When after the deluge the Creator thought good to give a promise of the uniform continuance of natural operations so long as the earth endured, He selected for a token of his covenant the phenomenon of the rainbow, which unites in itself results of the operations of air, water, heat, and light. I do not know on what ground "E. B." concludes that this was the first instance of rain and the rainbow. Such an inference from the narrative seems to be inadmissible when it is considered that the word for rain (*βρόχος*) occurs in Gen. viii. 2, in the description of the deluge.

J. C.

PHRENOLOGY.

SIR,—In your number of the 7th instant there is a second article on phrenology, in which the writer has, evidently to his own satisfaction, demolished the oft-before demolished science of phrenology. A third article, intended as a further killing of this theory, is promised. Probably you will open your pages to a reply.

Your critic characterizes the opinion of Horace Mann in favour of phrenology, as "climax and hyperbole in the natural history of rubbish." He might have found equally laudatory opinions of phrenology from eminent anatomists and physiologists. As a sample, I commend to his attention the following, from a lecture on phrenology, addressed to the Court of Assistants of the College of Surgeons, London, in 1821, by John Abernethy.

He recommends the doctrines of phrenology to the attention of the medical profession, as probable in themselves and teeming with the most important results. In his preface, he observes that he was one of the many who treated these doctrines with disregard, if not with contempt and derision. His opposi-

tion did not proceed from conviction arising from examination, but rather from ignorance of what they really were, and a general impression of their being absurd, heterodox, and irreconcilable to the principles of true philosophy.

His attention was particularly directed to the subject by the attacks upon it, and he was induced to examine it carefully. The result was his complete conversion, and his strenuous advocacy of what your critic calls an imaginary theory. Referring to his first impressions, Mr. Abernethy says, "The whole presented to me a rude appearance, quite different, as I then thought, from what is found in nature; however, light began to dawn on me, and beginning to consider the faculties in a certain way, and to group them after a certain order, the whole gradually formed themselves before me into a system of surprising symmetry, and like the disjointed parts of an anamorphosis, when seen from the proper point of view, collecting themselves under one elegant design, delighted me with the appearance of that very order and beauty which I would beforehand have expected to find in them." This is but a slight specimen of the way in which Mr. Abernethy viewed phrenology. Will your critic be so good as on his next killing of this provokingly life-loving science, or hypothesis, to say if this great man's opinions on a subject he had examined should form part of "his natural history of rubbish?"—Yours obediently,

Sept. 19, 1861.

C. D.

NECROLOGY.

SIR G. R. BARKER, K.C.B.

On Saturday, July 27th, at Simla, aged 43, Colonel Sir George Robert Barker, K.C.B., Brigadier commanding the Royal Artillery in Bengal. He was born in the year 1817, and entered the Royal Artillery in 1834, and at the time of his death was a Colonel R.A. He had seen much active service in India, and was nominated a K.C.B. in 1859.

LADY J. WALKER.

On Monday, the 16th inst., in Charlotte-street, Edinburgh, aged 48, the Lady Jane Walker. Her ladyship was the only daughter of the Right Hon. Francis William, sixth Earl of Seafield in the peerage of Scotland, by his first wife, Mary Anne, daughter of John Charles Dunn, Esq. She was born in 1813, and married, in 1843, Major-General Edward Walter Forester Walker, C.B., General Commanding Her Majesty's forces in North Britain.

MRS. JAMES.

On Monday, the 9th inst., at Bidleston, Suffolk, aged 31, Mrs. James. She was Clarissa Catharine, eldest daughter of the late Baron de Hochepeid Larpent, of Holmwood House, near Dorking, by Georgiana, daughter of Frederick Reeves, Esq., of East Sheen, Surrey, and married the Rev. Acland James, M.A., curate of Wattisham, near Bidleston, who survives to lament her loss. The title of Baron was conferred on the ancestor of the late Baron de Hochepeid by Leopold, Emperor of Germany, in 1704, and was confirmed to the late Baron and his family by Royal licence, dated Carlton House, London, Sept. 27, 1819.

EARL FORTESCUE.

On Saturday, the 14th instant, at Exeter, aged 68, the Right Hon. Earl Fortescue, K.G., LL.D. His lordship, who, for many years had been one of the most consistent and enlightened of our Liberal statesmen, and one of the chief supporters of the Whig interest in the West of England, was Hugh, eldest son of Hugh, third Baron, and first Earl Fortescue, K.G., by Hester, daughter of the Right Hon. George Grenville, and sister of the first Marquis of Buckingham, and was born in Pall-mall, on the 13th of February, 1783. He was educated at Brasenose College, Oxford, where he graduated B.A. in 1803, and subsequently proceeded to the usual degree of M.A. He entered public life in 1804 as M.P. for the borough of Barnstaple, which he represented in Parliament in the Liberal interest for three or four years; after twelve years spent in private life, he subsequently represented Tavistock, from 1820 till 1831, and Devonshire in the Parliament of 1831-2, and sat for the northern division of that county from that date until February, 1839, when he was summoned to the House of Lords in his father's barony of Fortescue, and appointed Lord Normanby's successor in the Lord Lieutenancy of Ireland. This post he administered with great ability and fairness down to the retirement of his party in 1841. His lordship was also Lord Steward of the Household, under Lord John Russell's administration of 1846-51. He was also Lord Lieutenant and Custos Rotulorum of Devonshire, and Lord High Steward of Barnstaple and South Molton, and held for many years the Colonelcy of the 1st regiment of Devon Militia, but resigned this latter post in 1855. The late earl married, firstly, in July, 1817, the Lady Susan Ryder, eldest daughter of the Right Hon. Dudley Ryder, late Earl of Harrowby (who died in 1827), by whom he had issue a family of three sons, of whom the second is recently deceased, and the third is M.P. for Andover. He married, secondly, whilst holding the vice-regal office in Ireland, the widow of the late Sir Marcus Somerville, Bart., but by her had no issue. His lordship succeeded in the title and estates by his eldest son Hugh, Viscount Ebrington, who was born in 1818, and was educated at Harrow School. He was a Lord of the Treasury in 1846-47, and sat as M.P. for Plymouth, in the Liberal interest, from 1841 till 1852; and afterwards for Marylebone, from the close of 1854 till shortly before the last general election, when he resigned his seat, owing to continued ill health and incipient blindness, and not long afterwards was called to the House of Peers in his father's barony of Fortescue, as his father had been before him. Lord Ebrington gained golden opinions among all classes whilst holding the post of Secretary to the Poor-law Board from the year 1847 down to 1851. His lordship married, in 1847, Miss Georgiana Augusta Charlotte Dawson-Damer, eldest daughter of the late Right Hon. Colonel George L. Dawson-Damer, by whom he has a youthful family. The noble house of

Fortescue over family derive salus Devout of the Chief by H Every treati of the lineal Lord Earl of Fortescue the be second noblen brothe Hon. Lady Earl co. Ch Earl Liente

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On W St. Bar Esses. and was College, 1798 by Dr. Govern Less, a cincts. Rectory of his de the offic work pu of the Cl Accom interest. England clergym married was left

Lieut Glamorg in 1859, Thomas by the L colonel, sonal, in property the amo subseque relatives also the which, on

Fortescue, which the late Earl represented, is one of those whose ancestors came over to England with William the Norman. It is said that the founder of the family protected William with his shield at the battle of Hastings, whence he derived the motto since so proudly borne by his descendants, "Forte scutum salus ducum," and his son obtained from the Conqueror a grant of land in Devonshire. His lineal descendant, Sir John Fortescue, one of the great soldiers of the reign of Henry V., had a son, Sir John Fortescue, who became Lord Chief Justice of England, and is said to have been appointed Lord Chancellor by Henry VI., after that monarch was forced to fly for refuge to Scotland. Every lawyer is familiar with his name, as the author of the celebrated treatise, "De Laudibus Legum Angliæ," and he so far contributed to the fortunes of the house that he may be styled the second founder of the Fortescues. His lineal descendant, Sir Hugh Fortescue, K.B., was summoned to Parliament as Lord Clinton, in right of his grandmother, daughter and co-heir of Theophilus, Earl of Lincoln and Baron Clinton, and he was himself created, in 1746, Baron Fortescue, with remainder to his half-brother, Matthew Fortescue, Esq., while the barony of Clinton passed, by an heiress, into another line. This Matthew, second Lord Fortescue, was the father of the first Earl, and grandfather of the nobleman whose death it is our painful duty to record here. The late Peer's brothers are the Hon. George M. Fortescue, of Boconnoc, Cornwall, and the Hon. and Rev. John Fortescue, Prebendary of Worcester; of his sisters, one, Lady Eleanor, never married; the rest married respectively, Lord King, the late Earl of Portsmouth, the late George Wilbraham, Esq., of Delamere House, co. Chester; Sir James Hamlyn Williams, Bart.; and the Earl of Devon. By Earl Fortescue's death, a blue riband of the Order of the Garter, and the Lord-Lieutenancy of Devonshire, fall to the disposal of Lord Palmerston.

J. DOUGLAS, ESQ.

On Saturday, August 30th, at Cavers House, Roxburghshire, aged 70, James Douglas, Esq., of Cavers. He was the head of an ancient line, being eighteenth in descent from Archibald, second son of James, second Earl of Douglas, who was killed at Otterburn in 1388, and from whom the family received the heritable sheriffship, which he held until the abolition of the office by Act of Parliament, about a century ago. Mr. Douglas was born at the close of 1790, or early in the following year, and succeeded to the estates on his father's death in 1815. He was married to Emma, daughter of Sir David Carnegie, Bart., of Southesk, who survives him. Mr. Douglas had issue two sons and five daughters, five of whom (one son and four daughters) are living. He is succeeded in his estates by his elder son, James, who was married, in June, 1858, to Mary Graham, youngest daughter of the late Sir Andrew Agnew, Bart. "Mr. Douglas," says the *Scotsman*, "in his younger days, was a great follower of most of the sports and pastimes of the day; but gave up these after becoming the subject of some strong religious impressions. He was a very voluminous writer, principally on controversial subjects. The following are the titles of some of his principal works: 'The Structure of Prophecy,' 'Popery and Infidelity,' 'The Philosophy of the Mind,' 'The Advancement of Society in Knowledge and Religion,' 'Errors regarding Religion,' besides a large number of pamphlets, &c. In his ecclesiastical connection Mr. Douglas was a Congregationalist."

THE REV. S. WIX.

On Wednesday, the 4th inst., aged 90, the Rev. Samuel Wix, M.A., Vicar of St. Bartholomew-the-Less, Smithfield, and Rector of Inworth, near Kelvedon, Essex. The rev. gentleman was a member of an old and respectable Essex family, and was born in 1771. He was educated at the Charter-house and at Christ's College, Cambridge, where he graduated in 1793. He was ordained Deacon in 1798 by the Bishop of Ely (the Hon. and Rev. Dr. Yorke), and priest in 1800, by Dr. Beilby Porteus, Bishop of London. In 1808 he was presented by the Governors of St. Bartholomew's Hospital to the Rectory of St. Bartholomew-the-Less, a very small parish, consisting of little more than the hospital and its precincts. Six years prior to this (namely, in 1802), he had been presented to the Rectory of Inworth, near Kelvedon, and both benefices he held up to the time of his death. He was a Fellow of the Royal Society, and served in due course the office of President of Sion College. He was the author of a very remarkable work published in 1819, "Reflections concerning the Expediency of a Council of the Church of England and the Church of Rome being holden, with a View to Accommodate Religious Differences," a subject in which he always took a deep interest. Many other works on the essential characteristics of the Church of England also proceeded from his pen. At his decease he was the oldest beneficed clergyman in the diocese of London, and the senior living Carthusian. He married a Miss Walford, a relative of the Walfords, of Boreham House, Essex, but was left a widower about ten years ago.

WILLS AND BEQUESTS.

Lieutenant-Colonel Gervais Powell Turbervill, K.H., of Eweny Abbey, Glamorganshire, who died in June last, executed his will in 1855, and a codicil in 1859, appointing his cousins—Sir George Lewen Glyn, Bart., and Captain Thomas Picton Warlow, R.A.—executors. Probate was granted on the 12th inst., by the London Court, and the personalty was sworn under £45,000. This gallant colonel, who was twice married, has bequeathed his property, both real and personal, in the following manner: he leaves to his relict a life interest in all his property, with the exception of £7,000, which the colonel states, in his will, is the amount of money he received on his marriage with his first wife and subsequently by the will of her father. This sum he therefore bequeaths to the relatives of his first wife. There is a legacy left to the sister of the testator, as also the reversionary interest in an estate, Corntown Court, Glamorganshire, which, on this lady's decease, is to revert to the testator's three cousins, Sir George

Glyn, Captain Warlow, and William Warlow, Esq., the residuary legatees. The colonel's father assumed the name of Turbervill, and dropped that of his own, which was originally Picton, and the testator was the nephew of that brave officer, General Sir Thomas Picton, a name which will ever live in history, who so gallantly fell on the memorable field of Waterloo, whilst sustaining the glory and honour of his native country. The testator himself entered the army at an early age, and ultimately obtained the Lieutenant-Colonelcy of the 12th Foot, and died at the age of 70. For a brief memoir of Colonel Turbervill, see our Journal of 22nd June, No. 51.

Sir Godfrey John Thomas, Bart., of Wenvoe Castle, Glamorganshire, and of White Hall, Chingford, Essex, at which latter residence he died on the 13th July, executed his will in the month preceding, nominating Lady Thomas, his relict, sole executrix, to whom probate was granted, on the 12th instant, by the London Court. Sir Godfrey's will is exceedingly brief, and is entirely in his own handwriting. There is but one bequest contained in it, which is in favour of his relict, to whom he leaves his entire property, real and personal, absolutely. Sir Godfrey states in his will that he places the most implicit confidence in his wife, Lady Thomas, with respect to their children, to whose affectionate care he consigns their future welfare and interests. Sir Godfrey's heir to the baronetcy is his infant son, of about five years of age. The late Sir Godfrey is of an ancient Welsh family. He appears to have led a quiet country life, and not to have sought either the honours or emolument of any public office. During his residence in Sussex, however, we find that he was appointed a Magistrate for that county. Sir Godfrey died at the very premature age of 37. For a short notice of Sir Godfrey, see our Journal, 20th July, No. 55.

Miss Maria Hughes, of Bishop Gate, Old Windsor, Berks, who died on the 20th of August last, had made her will in May, 1858, appointing Henry Bois, Esq., of Fenchurch-street, the Rev. Charles Farebrother, of Corby Vicarage, Lincoln, and Mrs. Dorothy Hughes, the relict of the testatrix's brother, Captain Henry Hughes, executors, to whom probate was granted by the London Court, on the 10th instant, the personalty being sworn under £90,000. This lady died possessed of a handsome fortune, consisting both of real as well as the personal property above stated. The directions contained in her will are exceedingly numerous, and many of them have reference to contingent circumstances, but the bulk of the testatrix's estate is devised to her nephew, Henry Morgan Hughes, Esq. Very liberal legacies are left to the testatrix's aunt, Miss Lloyd, and her brother, Morgan Hughes, Esq., and also to numerous friends; indeed to so many, that our limits preclude us from detailing them. There are also very handsome provisions made to her domestics, consisting of both legacies and annuities. There is also left a legacy to the poor of the parish in which she resided, and the bequests which do not exceed £120 are directed to be paid free of legacy duty.

Deputy Commissary-General George White, who died at his residence, St. John's-wood, on the 3rd ult., had executed his will in March, 1854; but having made some slight alterations therein subsequently, he re-executed the same in December, 1855. Probate was granted in the London Court, on the 7th inst., to Mrs. White, his relict, and Miss Georgina Jane White, his daughter, jointly, being the executors appointed in the will. This gentleman was attached to that important branch of our military service, the commissariat, a service so important in war, when duly and efficiently administered, as to contribute very materially to the success of a military campaign. Commissary-General White attained to a prominent rank in this branch of the service. His will is exceedingly short, and confined merely to two bequests, namely, the property of which the testator died possessed being directed to be divided equally between his relict and their daughter, the relict taking for life the whole of the furniture with some other effects.

The Honourable William Field, late collector of H.M.'s Customs at the Cape of Good Hope, but who died at Lower Bedford-place, Russell-square, London, on the 17th of January last, had executed his will in that colony on the 30th September, 1857, on the eve of his departure for England, appointing his son, the Hon. William Swan Field (who is his successor to the office of collector of customs), and the Hon. William Porter, attorney-general for the Cape, executors. Administration, with the will annexed, was granted to Thomas Samuel Poer Field, Esq., the lawful attorney of the executors. This is the will of a respectable gentleman, who held an honourable official government appointment at the Cape of Good Hope. The property he died possessed of he has left entirely amongst his family. To his relict he has bequeathed a life interest in the whole of it, and on her decease a legacy of £1,500 is bestowed on each of his daughters; and to his son (who, the testator states in his will, is otherwise amply provided for) he leaves a legacy of £1,000, and a contingent interest in the residue, in the event of the decease of his two daughters, who are appointed residuary legatees.

Dr. Edward Frederick Kelaart, M.D., Staff-Surgeon in H.M.'s Army, late of Tricomalie, in the island of Ceylon, executed his will in December, 1857, which was attested by no less than five witnesses. The testator died at sea on the 31st August, 1860, and his will was administered to in London, on the 10th instant, by Mrs. Elizabeth Nye Kelaart, widow; the lawfully appointed attorney of Charles Kelaart, Esq., now residing at Colombo; the brother of the testator, one of the executors; the other executors appointed having renounced. This medical gentleman, who held the appointment of Staff-Surgeon, appears to have died whilst in the discharge of his duty. His property, subject to the payment of a legacy to his sister, he has bequeathed in moieties, one-half to his relict, and the other half between the children of both his first and second marriages, equally amongst them.

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NOTICE.

All Communications on Editorial business must,
without exception, be addressed to THE EDITOR, and
not to any gentleman by name, connected, or supposed
to be connected, with THE LONDON REVIEW.

ADVERTISEMENTS.

CRYSTAL PALACE.—BLONDIN'S ONLY
ASCENT THIS WEEK will be on WEDNESDAY
NEXT, at Four o'clock, when he will perform several feats
which not one of those who use his name has ever ventured to
attempt. Admission, One Shilling; Children, half-price.

THEATRE ROYAL, HAYMARKET.—
Mr. Charles Mathews' new Comedy, *THE SOFT SEX*,
every evening at 8, preceded by a Comedietta. On
Monday, Tuesday, and Wednesday, after *THE SOFT SEX*,
USED UP. On Thursday, Friday, and Saturday, *THE*
PRACTICAL MAN.—Mr. Charles Mathews, Mr. Buckstone,
Mr. Compton, Mrs. Charles Mathews, Mrs. Wilkins, &c., will
appear every evening; concluding with *BACCHUS AND*
ARIADNE. Mr. Edwin Booth, of the principal American
Theatres, and son of Mr. Booth, contemporary of the elder
Booth, will make his first appearance in England, Monday,
September 30, in the character of Shylock.

NEW THEATRE ROYAL, ADELPHI.—
Sole Proprietor and Manager, Mr. B. WEBSTER.
Return of Mr. and Mrs. DION BOUCAULT. 232nd, 233rd,
234th, 235th, 236th, and 237th nights of *THE COLLEEN*
BAWN.—On Monday, Sept. 23, the Theatre having been
entirely repainted and redecorated, will be opened for the
Season, on which occasion Mr. and Mrs. Dion Boucault will
appear in their celebrated characters in *THE COLLEEN*
BAWN.—On Monday, Sept. 23rd, and during the week, the
Petite Comedy of *MUSIC HATH CHARMS*. Messrs. David
Fisher, Romer, Ward, Misses K. Kelly and Laidlaw; after
which (commencing at 8 to 8), the great sensation Drama of
THE COLLEEN BAWN, Mrs. Dion Boucault, Miss Woolgar,
Mrs. Billington, Mrs. H. Lewis (her first appearance at this
Theatre), Mr. Dion Boucault, Mr. Billington, Mr. S. Emery
(his first appearance these five years), Mr. David Fisher, Mr.
C. J. Smith, Mr. Stephenson, Mr. Romer; to conclude with
Morton's Farce of *LOVE AND HUNGER*, Mr. S. Emery,
Mr. D. Fisher, Mr. C. J. Smith, Mr. Romer, Mrs. H. Marston
(her first appearance at this Theatre), Misses K. Kelly and
Laidlaw. Doors open at half-past six, commence at seven.
Box Office open from 10 till 5. No charge for booking. In
rehearsal a new and original Drama (by the author of "*The*
Colleen Bawn") entitled, *THE OCTOBER; OR, A LIFE*
IN LOUISIANA.

GOVERNMENT SCHOOL OF MINES,
JERMYN-STREET, LONDON.

Director,
SIR RODRICK I. MURCHISON, D.C.L., &c.
The Prospectus for the Session, commencing on the 7th
October next, will be sent on application to the Registrar. The
Courses of Instruction embrace Chemistry, by Dr. Hofmann;
Physics, by Prof. Tyndall; Natural History, by Prof. Huxley;
Geology, by Prof. Ramsay; Mineralogy and Mining, by Mr.
Warrington Smyth; Metallurgy, by Dr. Percy; and Applied
Mechanics, by Prof. Willis.

TRENHAM REEKS, Registrar.

MINERALOGY.—KING'S COLLEGE,
LONDON.—Professor TENNANT, F.G.S., will com-
mence a COURSE OF LECTURES ON MINERALOGY,
with a view to facilitate the study of GEOLOGY and of the
application of mineral substances in the ARTS. The Lectures
will begin on Friday Morning, October 14th, at Nine o'clock.
They will be continued on each succeeding Wednesday and
Friday, at the same hour.—Fee £2.2s.

R. W. JELF, D.D., Principal.

BRAY'S TRACTION ENGINE COMPANY
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Present Capital, £25,000 in 5,000 Shares.
With power to issue Shares for an amount not exceeding
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Liability limited to the amount of shares held.

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SECRETARY—S. H. Louttit, Esq.

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The act for reducing and regulating the tolls to be demanded
for the use of traction engines having now received the royal
assent, the Directors feel that the period has arrived when the
business of the Company may be extended with advantage to
the shareholders and the public.

The Company was formed with the object of working the
Patent for Traction Engines granted to Mr. Bray. These
engines are so well known, by their having been of late
identified with several works of great magnitude, that it is
unnecessary to state here the nature of their construction.
The great merit of the invention lies in the principle of the
driving-wheels, which combine perfect simplicity with the
greatest efficiency, and a capacity of adapting themselves by a
simple method to all varieties of roads. The Company
is also possessed of several subsequent patents for improve-
ments in traction engines of considerable importance and
value.

The Lords Commissioners of the Admiralty having had an
engine of the earliest construction on trial in Woolwich Dock-
yard, found its use to be attended with great economy and
advantage as compared with horse labour, and they have ac-
cordingly given an order for a new one, to be built for perma-
nent service in the yard, which is to be fitted with the improve-
ments referred to, as well as with various appliances for driving
machinery, hoisting weights, &c.

The Company at present have engines profitably engaged in
the neighbourhood of the metropolis, while business operations
are open to it in all parts of the kingdom, and indeed in nearly
every part of the world. Inquiries are constantly coming from
contractors, merchants, mine and colliery proprietors, manu-
facturers, agriculturists, and other persons whose operations
call for a large employment of horse labour, who see the vast
importance of taking advantage of this means of land trans-
port as a substitute for the expensive and uncertain mode of
horse conveyance.

The case of India may be cited as a special instance: at pre-
sent only the districts in the neighbourhood of the great rivers
and their tributaries are well cultivated, whilst districts of un-
limited extent, and capable of producing cotton, grain, and
other produce in abundance, are almost altogether neglected,
solely for want of some effectual means of transport.

As was to have been expected, difficulties were at first en-
countered from want of experience in the arrangement and
construction of the engines, but this led the Directors, after
much consideration, to establish a small factory, for the pur-
pose of having built under their own supervision, on the most
approved principle, an engine which could be relied upon for
doing the heaviest work.

This engine has lately been completed, and the Directors are
glad to be able to state, that the trials it has undergone, and
the admirable manner in which it has executed various works,
prove that a very important step in advance has been made.

The Company's operations will secure a large return for the
capital invested, from the following sources of income:—

1. From the manufacture and sale of engines and waggons.
2. From the royalties due from manufacturers who may con-
struct and sell engines on their own account.
3. From working contracts, and letting out engines and wag-
gons to the public on hire.

Full prospectuses and forms of applications for shares, as
well as any information respecting the affairs of the Company,
will be afforded on application to Mr. S. H. LOUTTIT, Secre-
tary, at the Company's Offices, 12, Pall-mall East, London, S.W.

THE SLATE MOUNTAIN COMPANY
(Limited).—Notice of Dividend.—The Directors of the
above Company hereby give notice, that they have concurred
an arrangement with a thoroughly responsible party to under-
take the management of the Company's operations in Wales,
and have, at the same time, to inform the public that the
Manager has undertaken to guarantee to all shareholders in
the Company a dividend for the first year, and has lodged with
the Company's bankers an amount of cash more than sufficient
to cover his guarantee. By order,
No 4, Lothbury (E.C.). A. MAYOR, Secretary.

THE SLATE MOUNTAIN COMPANY
(Limited).—Capital £30,000 in 6,000 Shares of £5 each.
Deposit £1 per share, and £1 upon allotment.—Registered
pursuant to the Joint Stock Companies Acts, limiting the
liability of each Shareholder to the amount of their subscrip-
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SECRETARY (pro tem).—Mr. Mayor.

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Full prospectuses, with reports upon the quarry by one of the
Government Geological Surveyors; Mr. Jones, the slate mer-
chant, in the City-road; Mr. Wm. Griffiths, the Manager of the
Moelwyn Quarries; Captain Silas Evans, of Avoca, Manager
of the Carysfort Mines; and other practical and experienced
authorities, together with forms of applications for shares, can
be obtained from the Secretary, at the Company's offices, 4,
Lothbury; or from any of the brokers.
All deposits returned in full, unless half the shares are sub-
scribed for.

THE SLATE MOUNTAIN COMPANY
(Limited).—Notice is hereby given, that, owing to the
numerous applications for shares already sent in, the Directors
will meet to consider the same and make the requisite allotments,
on Friday, the 27th of September. By order,
Offices, 4, Lothbury. A. MAYOR, Secretary.

THE SLATE MOUNTAIN COMPANY
(Limited).—ALL APPLICATIONS FOR SHARES in this
Company must be sent in to the brokers or Secretary on or
before Thursday, the 26th of September. By order,
A. MAYOR, Secretary.

THE MERCANTILE FIRE INSURANCE
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Temporary Offices: 31, Threadneedle-street, E.C.

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George Young, Esq. (Messrs. Begbie, Young, & Co.)
With power to add to their number.

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Geo. Henry Whyting, Esq.

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The Directors have pleasure in stating that they are now
prepared to entertain proposals for Insurance on all classes of
risks in the United Kingdom. The rates of Premium in all
cases will be as moderate as possible, and governed in each
case by a careful consideration of the risk proposed. The
Company, in arriving at the rate to be charged, will give the
Insurer the full benefit of any improvement that may be made
in the peculiar features of the risk, or in the construction and
arrangement of the premises.

The Company will ever distinguish itself in its promptitude
and liberality in the settlement of claims.

The importance of the subject of Insurance being now more
fully understood and appreciated, it becomes indispensably
necessary that every Company which undertakes to replace the
loss occasioned by Fire, should be enabled to show its un-
doubted ability to perform its engagements.

As ample evidence of the standing and position of the MER-
CANTILE FIRE INSURANCE COMPANY, it may be stated
that its subscribed Capital is

TWO MILLIONS STERLING,

And that the Capital already paid up and invested amounts to
TWO HUNDRED THOUSAND POUNDS.

Terms of proposal, and every information, will be furnished
on application at the Temporary Offices, 31, Threadneedle-
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SOVEREIGN LIFE ASSURANCE COMPANY, 48, St. James's-street, London, S.W.

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Founded in 1845.

To ample security, this Office adds the advantages of moderate rates and liberal management.
The Bonuses hitherto declared have been unusually large, and amount in some cases to a return of four-fifths of the premium paid.

No charges are made beyond the premium.
Medical Fees are paid by the Office, in connection with Policies effected with the Company.

For those who desire to provide for themselves in old age, sums may be assured payable on attaining a given age, as 50, 55, or 60, or at death, if it occur previously.

ENDOWMENTS FOR CHILDREN are made payable on attaining the ages of 14, 18, or 21, so as to meet the demands which education or settlement in life may create. By the payment of a slightly increased rate, the premiums are returned in the event of previous death.

Every information will be readily afforded on application to the Secretary or Agents.

EXTRACT FROM DIRECTORS' REPORT, MAY, 1861.

"The Directors are enabled, in rendering their Annual Account, to announce that the year 1860 exhibited a continuance of the same healthy advance on which they last year had to congratulate the Proprietors, and so far as can be foreseen, presents the elements of future prosperity.

"Proposals for the Assurance of £254,033 were made to the Office during the past year, of which amount £167,259 were assured, producing in New Premiums, £5,619. 0s. 8d. The Income of the Office on the 31st December last had reached £46,562. 9s., being an increase over 1859 of £9,700.

"The Accounts, having reference to the last three years, show that the Cash Assets have exceeded the liabilities in a gradually increasing ratio, thus:—

In 1858 the Excess was	£8,269	7	4
1859	"	"	12,086
1860	"	"	18,557

"It will be seen that the amount added to the Funds of the Company during the past year shows a surplus of a very satisfactory character, notwithstanding the payment of £14,184. 14s. 5d. for claims consequent on the Death of Members.

"Since the Directors last had the pleasure of meeting the Proprietors, the Royal Assent has been given to a Special Act of Parliament, conferring additional powers on the Company.

"As the close of the present year will bring us to the period prescribed for the Valuation of the Business, with a view to the declaration of a Bonus, the Directors very earnestly invite the co-operation of the Proprietors, and all others connected with, or interested in the Office, to assist their efforts in making the present the most successful year of the Company's existence, in order that, individually and collectively, all interests may be advanced."

HENRY D. DAVENPORT, Secretary.

UNITY FIRE INSURANCE ASSOCIATION

Unity-buildings, 8, Cannon-street, City.

Income from fire premiums in 1860..... £70,656 16 0

Every description of risks insured at tariff rates.

CORNELIUS WALFORD, Manager.

UNITY GENERAL LIFE ASSURANCE ASSOCIATION, Unity-buildings, 8, Cannon-street, City.

Income from life premiums in 1860..... £24,303 8 9

Loans granted. Good bonuses. Moderate premiums.

CORNELIUS WALFORD, Manager.

WATERLOO LIFE ASSURANCE COMPANY.

THIS COMPANY OFFERS THE SECURITY of a Capital of £400,000 and the advantages of moderate rates. The last Bonus was in 1859, the next will be in 1864.

Claims within the days of Grace paid by this Company.

NO EXTRA PREMIUM FOR VOLUNTEERS.

This Company's Policies insure against ACCIDENT or DISEASE totally incapacitating the insured, for a small extra premium.

Sums of money may be deposited at interest, for fixed periods on upon terms of Special Arrangement.

PROSPECTUSES and FORMS on application to the HEAD OFFICE, 355, Strand, London.

ESTABLISHED 1838.

ALBERT MEDICAL AND FAMILY ENDOWMENT LIFE ASSURANCE COMPANY.

Principal Offices—

7, Waterloo-place, and 42, New Bridge-street, London.
Branch Offices—At Calcutta, Madras, Bombay, Agra, and Hong-Kong, with agencies throughout the United Kingdom.

POSITION, INCOME, AND PROGRESS OF THE COMPANY.

The accumulated assets exceed £650,000

The subscribed capital 500,000

The annual income from life premiums exceeds 250,000

The policy claims and bonuses paid to claimants about 1,000,000

The new business is progressing at the rate of about £30,000 per annum.

The Company transacts the following description of business:—Life Assurance on Healthy and Diseased Lives, Annuities and Endowments of all kinds, India Risk Assurances, and Guarantee business; and confers upon Insurers great facilities and advantages, coupled with perfect security.

Special and peculiar features have been adopted, in order to render the Company's Policies additionally valuable as securities, and to offer to the insured means whereby their Policies may be saved from forfeiture.

Prospectuses, forms of proposal for Assurances, and every information, may be obtained on application to any of the Society's Agents; or to the Secretary, at 7, Waterloo-place, London, S.W., to whom applications for agencies in places not efficiently represented may be addressed.

C. DOUGLAS SINGER, Secretary.

GREAT NORTHERN RAILWAY.—TOURISTS' TICKETS, at Cheap Fares, available for One Calendar Month, are issued from KING'S-CROSS STATION, as under:—

	Fares for the Double Journey.		
	1st Class.	2nd Class.	Closed Carriages
To Edinburgh and back.....	119 0	79 6	40 0
To Glasgow and back.....	113 0	82 0	42 0
To Stirling and back.....	118 0	87 0	44 0
To Dundee or Perth and back.....	120 0	90 0	44 0
To Dundee, Forfar, Brechin, Montrose, Arbroath, or Aberdeen and back.....	120 0	90 0	46 0
To Scarborough, Whitby, Redcar, Filey, Bridlington, or Withernsea and back.....	51 0	35 0	
To Harrogate and back.....	43 0	32 6	
To Isle of Man and back.....	70 0	50 0	

Passengers wishing to stay longer than one calendar month at Scarborough, Whitby, Redcar, Filey, Bridlington, Withernsea, or Harrogate, can do so on payment of a small additional percentage.

For further particulars, see Programmes, to be obtained at King's-cross Station, and all the Receiving Offices in London, and at the Stations in the Country.

SEYMOUR CLARKE, General Manager.

London, King's-cross Station, June 24th, 1861.

FAMILY TICKETS to the SEA-SIDE, by SOUTH-WESTERN RAILWAY, from Waterloo-bridge Station, to RYDE, Cowes, Isle of Wight, Portsmouth, Southsea, Gosport, Southampton, Lymington, Weymouth, Poole (for Bournemouth or Swanage), Wareham (for Swanage), Jersey and Guernsey, Exeter, Exmouth, Bideford or Barnstaple (for Ilfracombe), Honiton (for Sidmouth), Colyton (for Seaton), Axminster (for Lyme Regis, Charmouth, and Axmouth). Available for one month or for longer periods. See South-Western time tables, or a hand bill will be sent on application to the Traffic Manager, Waterloo-bridge Station.

EASTERN COUNTIES RAILWAY.—A MONTH AT THE SEA-SIDE.

FAMILY TICKETS (for not less than three persons), from LONDON to LOWESTOFT or Yarmouth and back: First-class, 32s.; second-class, 25s. each person. From London to Aldborough and back: First-class, 26s.; second-class, 21s. each person. From London to Harwich or Dovercourt and back: First-class, 20s.; second-class, 16s. each person. Extra tickets are issued at half these rates to enable one member of the family to travel to London and back. The Family Ticket may be extended on payment of a small per centage.

By order, J. B. OWEN, Secretary.

MRS. BATHURST, LADIES' AND CHILDREN'S DRESSMAKER, 22, Little Marylebone-street, Widow of the late Wm. Bathurst, Twenty Years a Tradesman in Marylebone, having been compelled since her husband's death to relinquish her house and business in Nottingham-street, and being entirely dependant upon her own exertions for the support of herself and young children, respectfully solicits the patronage of the Ladies, assuring them no efforts shall be wanting to give entire satisfaction.

GLENFIELD PATENT STARCH, used in the Royal Laundry, and pronounced by Her Majesty's Laundress to be the finest Starch she ever used.—Sold by all Chandlers, Grocers, &c. &c.

WOTHERSPOON & CO., Glasgow and London.

ACCOUNT BOOKS, &c., of all rulings ready in stock, or made to any pattern on the premises.

LITHOGRAPHIC and COPPER-PLATE.—Circulars printed on the shortest notice; all kind of copper-plate printing with economy and despatch.

CARD-PLATES.—Engraved in various styles with despatch. **LETTER-PRESS.**—Letter-press work of every description: circulars, catalogues, share-plates, &c.

NOTE-PAPER.—Embossed-die, plain, and colours, with crest, and initials, and printed address, without charging for dies or plates.

STATIONERY CASES and STATIONERY CABINETS in great variety.

DRAWING and TRACING-PAPERS.—Whatman's superior quality, all sizes. Superior tracing and India papers.

GOLD PENS, &c.—Gold pens of superior finish, various degrees, 6s. each.

NEWSPAPER ENVELOPES.—A new and useful article, ready for use, four dozen for 6d.

SOLICITORS.—Draft, from 7s. a ream; lined brief, 17s. 6d. a ream.

ENVELOPES, &c.—Of every quality, as low as any house in the trade.

All articles being prepared on the premises can be insured with despatch and economy at

F. ARNOLD'S MANUFACTURING STATIONER, &c.
86, Fleet-street, corner of St. Bride's Avenue.
(Late of 49, Fleet-street.)

LOCK-STITCH SEWING MACHINES, MANUFACTURED BY THE WHEELER AND WILSON MANUFACTURING COMPANY, WITH RECENT IMPROVEMENTS.

Crystal Cloth Presser, new style Hemmer, Binder, Corder, &c.

OFFICES AND SALE ROOMS,
462, OXFORD-STREET, LONDON.

INSTRUCTIONS GRATIS TO EVERY PURCHASER.

THE LOCK STITCH SEWING MACHINE will Gather, Hem, Fell, Bind, or Stitch with great rapidity, answers well for ALL descriptions of work, is simple, compact, and elegant in design, the work will not ravel, and is the same on both sides, the speed is from 1,000 to 2,000 stitches per minute; a child twelve years old can work it, and the Machine is suitable alike for the Family or the Manufacturer.

Illustrated Prospectus, with Testimonials, Gratis and Post free.

REMOVAL.—On or about the 20th of September, the business of the Wheeler & Wilson Manufacturing Company will be removed to 139, Regent-street, W.

FOR CLEANING PLATE and JEWELLERY.—BRADLEY'S ALBATUM, or White Rouge, free from Mercury and soft, gives readily a natural, brilliant, and lasting Polish, without wearing the Articles, and is the only thing fit for Plated Goods. Sold by BRADLEY & BOURDAS, Chemists, Belgrave, London, and by Chemists, Silversmiths, Oilmen, and Ironmongers, in boxes at 1s. and 2s. See that "Bradley's Albatum" is on the box.

FENDERS, STOVES, FIRE-IRONS, and CHIMNEY-PIECES.—Buyers of the above are requested, before finally deciding, to visit WILLIAM S. BURTON'S SHOW-ROOMS. They contain such an assortment of Fenders, Stoves, Ranges, Chimney-pieces, Fire-irons, and General Ironmongery as cannot be approached elsewhere, either for variety, novelty, beauty of design, or exquisiteness of workmanship. Bright stoves, with ornate ornaments and two sets of bars, 37. 15s. to 337. 10s.; Bronzed Fenders, with standards, 7s. to 57. 12s.; Steel Fenders, 27. 15s. to 117.; ditto, with rich ornate ornaments, from 27. 15s. to 187.; Chimney-pieces, from 17. 8s. to 1007.; Fire-irons, from 2s. 3d. the set to 47. 4s.

The BURTON and all other PATENT STOVES, with radiating hearth plates.

BEDSTEADS, BATHS, and LAMPS.—WILLIAM S. BURTON has SIX LARGE SHOW-ROOMS devoted exclusively to the SEPARATE DISPLAY of Lamps, Baths, and Metallic Bedsteads. The stock of each is at once the largest, newest, and most varied ever submitted to the public, and marked at prices proportionate with those that have tended to make his establishment the most distinguished in this country.

Bedsteads, from 12s. 6d. to £20 0s. each.
Shower Baths, from 8s. 6d. to £6 0s. each.
Lamps (Moderateur), from 6s. 0d. to £3 10s. each.
(All other kinds at the same rate.)
Pule Colza Oil 4s. per gallon.

CUTLERY WARRANTED.—The most varied assortment of TABLE CUTLERY in the world, all warranted, is on sale at WILLIAM S. BURTON'S, at prices that are remunerative only because of the largeness of the sales. 34-inch ivory-handled table knives, with high shoulders, 12s. 6d. per dozen; dessert to match, 10s.; if to balance, 6d. per dozen extra; carvers, 4s. 3d. per pair; larger sizes, from 20s. to 27s. 6d. per dozen; extra fine ivory, 33s.; if with silver ferules, 40s. to 50s.; white bone table knives, 6s. per dozen; dessert, 5s.; carvers, 2s. 3d. per pair; black horn table knives, 7s. 4d. per dozen; dessert, 6s.; carvers, 2s. 6d.; black wood-handled table knives and forks, 6s. per dozen; table steels, from 1s. each. The largest stock in existence of plated dessert knives and forks, in cases and otherwise, and of the new plated fish carver.

WILLIAM S. BURTON'S GENERAL FURNISHING IRONMONGERY CATALOGUE may be had gratis, and free by post. It contains upwards of 500 Illustrations of his illimitable Stock of Sterling Silver and Electro-Plate, Nickel Silver and Britannia Metal Goods, Dish Covers, Hot Water Dishes, Stoves, Fenders, Marble Chimney-pieces, Kitchen Ranges, Lamps, Gaseliers, Tea Trays, Urns, and Kettles, Clocks, Table Cutlery, Baths, Toilet Ware, Turnery, Iron and Brass Bedsteads, Bedding, Bedroom and Cabinet Furniture, &c., with Lists of Prices and Plans of the Twenty large Show Rooms, at 39, Oxford-street, W.; 1, 1A, 2, 3, and 4, Newman-street; 4, 5, and 6, Perry's-place; and 1, Newman-mews, London.

ADOPTED BY THE GOVERNMENTS OF GREAT BRITAIN, SPAIN, DENMARK, BRAZIL, RUSSIA, &c.

EASTON'S PATENT BOILER FLUID, for the Removal and Prevention of INCORUSTATION in STEAM BOILERS, Land, Marine, Locomotive, and Stationary. Testimonials and particulars forwarded on application to F. S. EASTON and G. SPRINGFIELD, Patentees and Sole Manufacturers, 37, 38, and 39, Wapping Wall, E., London; or of their Agents in the Principal Manufacturing and Seaport Towns of Great Britain and Ireland.

AGENTS IN GREAT BRITAIN:—

Aberdeen—Mr. James F. Wood.	Huddersfield—Mr. H. Greaves.
Ashton-under-Lyne—Mr. S. G. Fielden.	Hull—Messrs. A. L. Fleming & Co.
Belfast—Mr. W. T. Matier, C.E.	Leeds—Mr. J. P. C. Westwood.
Birmingham—Mr. Adam Dixon.	Leicester—Mr. Benj. Pochin.
Chester—Mr. W. A. Rowland.	Liverpool—Mr. J. McInnes.
Devonport—Mr. Corn. Boulds.	Manchester—Messrs. Morris and Sutton.
Dublin—Mr. W. Fitt.	Newcastle-on-Tyne—Mr. T. N. Cathrall.
Dundee—Mr. R. J. Niven.	Nottingham—Mr. G. D. Hughes.
Frome—Mr. W. B. Harvey.	Oldbury—Mr. C. Tonge.
Forest of Dean—Mr. T. Nicholson, Lydney.	Southampton—Mr. Jos. Clark.
Glasgow—Mr. W. Mutrie.	Southsea—Mr. T. Cheesman.
Grantham—Messrs. Hornsby and Son.	Wakefield—Mr. T. Whitaker.
Hartlepool—Mr. W. Talbot Cheesman.	

FOREIGN:—

Brazil—Messrs. Miers, Bros., and Maylor, Rio Janeiro.	Holland—Mr. Joseph Courlander, the Hague.
Belgium—Messrs. Breuls, Bros., Antwerp.	South Russia—Mr. William Baxter, Nicolson.
Demerara—Mr. W. Vaughan, Georgetown.	South Australia—Mr. W. Isbister, Adelaide.

FINE HEAD OF HAIR, THE BEARD, WHISKERS, AND MOUSTACHIOS.

ROWLAND'S MACASSAR OIL.—This elegant and fragrant Oil is universally in high repute for its unprecedented success in promoting the Growth, Restoring, and in Beautifying the Human Hair. For children it is especially recommended, as forming the basis of a beautiful head of hair. The numerous testimonials constantly received of its efficacy afford the best and surest proofs of its merits. Price 3s. 6d., 7s., 10s. 6d. (equal to four small), and 21s. per bottle. Sold at 20, Hatton Garden, and by Chemists and Perfumers.

* Ask for "ROWLAND'S MACASSAR OIL."

TO PROFESSIONAL GENTLEMEN.

PEARS'S TRANSPARENT SHAVING-STICK produces, with hot or cold water, an instantaneous, unctuous, and consistent lather, which softens the beard, and thereby renders the process of shaving more rapid, easy, and cleanly, than the old mode of using the brush and the dish.

PEARS'S TRANSPARENT SOAP surpasses all others for toilet purposes, imparting a most agreeable odour and softness to the skin. Prices, in tablets, 1s. each and upwards; made also in round cakes suitable for the shaving-dish, from 1s. each. To avoid counterfeits, observe that the genuine Transparent Soap can be procured at the Inventor's Manufactory, 31, Great Russell-street, Bloomsbury; or of J. & E. ATKINSON, 24, Old Bond-street; SMYTH & NEPHEW, 117, New Bond-street; W. PRITCHARD, 65, Charing-cross; W. WINTER, 205, Oxford-street; J. SANGER, 150, Oxford-street, London; and of all respectable Perfumers in town and country; or, upon sixteen postage stamps being sent to Messrs. A. & F. PEAR'S, one Shaving Stick will be forwarded free for trial.

SLUGG'S MODEL TWO GUINEA ACHROMATIC MICROSCOPE

IS THE CHEAPEST EVER PRODUCED,

AS THE FOLLOWING IMPORTANT AUTHENTIC TESTIMONIALS FULLY PROVE:—

"I can scarcely tell you how pleased I am with it. It is a perfect wonder. The workmanship seems excellent. I have tried it (with an $\frac{1}{4}$ triplet) with some of the severest tests, the scales of the Podura Plumbea, Hipparchia Janira, and Pontia Brassica, and also the Diatomaceæ, it really shows the markings on the scales, with better definition than my larger instrument. It shows the spiral vessels in Oat Straw, and the lenses in a Midge's Eye admirably—pretty good tests of the capability of such an instrument."—From the Rev. Challis Paroissien, Hardingham Rectory, Norfolk, August 12th, 1861.

"It is quite powerful enough to enable any one to distinguish the different urinary deposits, and the casts of the uriniferous tubuli. I shall now seldom use my large microscope for these purposes, though it cost as many pounds as yours cost shillings."—Dr. Dohie, Chester.

"I must say I am quite delighted with it; its performance exceeds my expectation, being equal to much more expensive instruments which I have since had the curiosity to examine."—Mr. John Stafford Kenyon, 1, Lever-street, Manchester.

"I am perfectly satisfied with its capabilities."—Dr. Ferneley, Grantham.

"I have much pleasure in stating my satisfaction with the result."—Dr. Cheves, Milbrook, Davenport.

"It is truly a marvel, and cannot be surpassed by any costing double the money."—*The Chemist and Druggist*, June 15th, 1861.

Price, with $\frac{1}{4}$ inch triplet, giving three powers of 40,000, 10,000, and 2,500, in a handsome mahogany cabinet, with drawer, forceps, glass slides, and animalcule cage	£2	2	0
The same instrument, with an eighth triplet, instead of the quarter, giving higher magnifying powers of 150,000, 40,000, and 10,000	2	12	6
Stage forceps, extra	0	1	6
Condenser, extra	0	6	0

SLUGG'S MODEL FOUR GUINEA ACHROMATIC MICROSCOPE.

This instrument is much larger than the foregoing, with higher power and larger field; its workmanship being of the very best quality, and not excelled by anything sent out of either London or Paris. This I guarantee. It possesses both coarse and fine adjustment, an eighth-inch triplet object-glass in a brass box, dividing into quarter and half inch; stage forceps, condensing lens, and animalcule cage; and is fitted in a handsome mahogany cabinet, with large drawer, grooved for about thirty slides.

PRICE £4. 4s.

The same instrument, having a lever stage, moveable in all directions, with ball and socket, or with milled head and rack, giving motion in one direction.

PRICE £5. 0s.

The same, with mechanical stage, having double rack, with two milled heads, giving motion in both directions; a most complete and beautiful instrument.

PRICE £6. 10s.

Catalogues of Astronomical and Tourists' Telescopes forwarded on receipt of Three Stamps.

JOSIAH T. SLUGG,
214, STRETFORD ROAD, MANCHESTER.

MR. CLAUDET'S CARTES DE VISITE.

MR. CLAUDET, Photographer to the Queen, cautions the public that some shops are selling spurious imitations of his Carte de Visite Portraits. Although the imperfection of them is manifest, these counterfeit productions are capable of deceiving persons who do not examine the photographs attentively. To prevent this deception Mr. Claudet begs leave to observe that all the Cartes de Visite which come from his establishment are stamped with his name on the back.

107, REGENT STREET,
THREE DOORS FROM VIGO STREET, IN THE QUADRANT.

GUSH AND FERGUSON'S
CELEBRATED
CARTES DE VISITE, OR ALBUM PORTRAITS.
TWENTY-FOUR FOR ONE GUINEA.
GALLERY, 179, REGENT-STREET, W.

THE LATEST PRODUCTIONS FROM THE HIGHLAND HAND LOOMS.

SCOTT ADIE,
LINSEY WOOLSEY MANUFACTURER TO THE COURT,
Has now on view the largest choice for the season of this very useful Scotch fabric, and having been successful in getting made a very great variety of all the Heather, Granite Stones, and other natural and very beautiful mixed colours, Fancy Patterns, and Stripes of the Clans, &c., respectfully solicits an inspection, having recently very much enlarged his premises, and his great STOCK of SCOTCH GOODS, in their various departments, without loss of time.
PATTERNS FORWARDED TO THE COUNTRY FREE.
115 & 115A, REGENT-STREET. ENTRANCE AT THE CORNER OF VIGO-STREET.

MOORE & CO.,
FISHING ROD & TACKLE MAKERS,
90A, ST. MARTIN'S LANE, W.C.,
LONDON.

ESTABLISHED 1721.

An Equipment of Trout Tackle for £2. 5s.

Four-joint hickory fly rod, two tops, winch and line, three gut bottoms, two dozen Trout flies and fly book, for £2. 5s. Warranted the best make.

An Equipment for Spinning and Trolling for Trout and Jack for £4.

Four-joint bamboo rod, two tops, winch and line, three single gut, two twisted gut, two gimp traces, shotted for use, three sets of gut, and three sets of gimp tackle, landing handle, ring, and net, gaff hook and tackle case, for £4. Warranted best make.

An Equipment for General Fishing for £4.

Five-joint hickory general rod, five tops, winch and line, two dozen flies, two dozen gut hooks, three gorge hooks, three traces, four sets of tackle, floats, gut lines, landing handle, ring, and net, and tackle case, for £4. Warranted.

A Complete Outfit for Salmon Fishing in Norway for £16.

Four-joint eighteen feet Salmon rod, three tops, top case, partition bag, landing handle, patent steel ring and net, gaff hook, deal box with lock and straps for travelling, best town made winch, 120 yards of the best eight-plait silk prepared line, four dozen Salmon flies, the best selected patterns, four twisted gut casting lines, four single gut ditto, fly book, &c., £16.

The above Articles warranted of the best materials and make.

Outfit for India or Canada from £10 to £15.

FLIES

FOR NORWAY, CANADA, IRELAND,
SCOTLAND, AND WALES.

Salmon Flies ...	per doz.	12s. to 30s.
Sea Trout ditto ...	"	9s.
Lake ditto ...	"	4s.
Trout ditto ...	"	2s.

Salmon and Trout Flies dressed to Pattern and sent by Post.

Moore & Co.'s Newly Improved Minnow Trap,

Whereby any quantity of Minnows may be secured in a very short space of time.

Price 6s. 6d. each.

Country Orders, with a remittance or reference in London, attended to immediately, and sent to all parts of the World.

Post-Office Orders to be made payable at Charing Cross.

Catalogue of Prices of Fishing Rods and Tackle, with List of the Principal Fishing Rivers in England, Scotland, Ireland, and Wales, Gratis.

WHEN YOU ASK FOR

GLENFIELD PATENT STARCH

SEE THAT YOU GET IT,

AS INFERIOR KINDS ARE OFTEN SUBSTITUTED.
WOTHERSPOON & CO., GLASGOW & LONDON.

FIRE ANNIHILATOR, OR VAPOUR FIRE-ENGINE, is an instrument by which Carbonic Acid and Nitrogen Gases and Steam are generated at the moment and in large quantities. The vapour, so produced, being thrown upon or about an ignited body stifles the fire, by cutting off the supply of oxygen. The effect of the operation is instantaneous to annihilate the flames, reduce the temperature, absorb or dissipate the smoke, and render the atmosphere perfectly respirable, so that any person may enter a room that has been on fire immediately after the machine has been used. The machine is simple—complete in itself—cannot get out of order—is ready for immediate use—and operates almost instantaneously. The vapour given out may be breathed with impunity. The practical value of the instrument has been proved beyond question by numerous cases of use at real fires in dwellings, factories, and ships, and by the practice of the Leeds Fire Brigade and Gravesend Fire Police. Price £2 and upwards.
Office of the Fire Annihilator Company, 105, Leadenhall-street, E.C., London.

TO GENTLEMEN.

Excellent Garments of Newest and Best Style, at a Most Reasonable Price.

W. COOPER & CO.,

"TAILORS' ASSOCIATION,"

34, CASTLE-STREET EAST, OXFORD-STREET, W.

(Patterns Free by Post.)

FAMILY MOURNING.

MESSRS. JAY respectfully announce that GREAT SAVING may be made by PURCHASING MOURNING at their Establishment. The Stock of Family Mourning is the largest in Europe. Mourning Costume of every description is kept Ready Made, and can be forwarded in Town or Country at a moment's notice. The most Reasonable Prices are charged, and the Wear of every Article guaranteed.

LONDON GENERAL MOURNING WAREHOUSE,

Nos. 247, 249, and 251, REGENT STREET.

JAY'S.

FAMILY MOURNING.

PETER ROBINSON'S

FAMILY AND GENERAL MOURNING WAREHOUSE

Is now (since its extensive alterations) the LARGEST IN LONDON. Families will effect a great saving by forwarding their orders to THIS ESTABLISHMENT, where the BEST MOURNING may be purchased at the most reasonable prices, and the wear of the article is guaranteed.

DRESSES, MANTLES, BONNETS, and MOURNING COSTUME of every description, is kept ready-made, and can be forwarded, in town or country, immediately on receipt of order.

DRESS-MAKING TO ANY EXTENT ON THE SHORTEST NOTICE.

PETER ROBINSON'S GENERAL MOURNING WAREHOUSE,

103 to 108, OXFORD STREET, W.

TO TOURISTS AND TRAVELLERS.—PASSPORTS AND VISES PROCURED, without personal attendance, expense, and trouble saved, by applying to C. GOODMAN, Agent (Successor to LEIGH & Co.), 407, Strand, London, W.C., three doors east of the Adelphi Theatre.—N.B. Circular of Instructions Post Free.

MORTLOCK'S CHINA WAREHOUSE,

250, OXFORD STREET.

SELLING OFF.

In consequence of the Marquis of Westminster's refusal to renew the Lease of the above premises (in connection with Park-street), JOHN MORTLOCK is anxious to decrease his RICH STOCK, and is prepared to make a great allowance for cash.

250, OXFORD-STREET, and 58, PARK-STREET, near Hyde-park.

THE "Blessings of Peace" are to be found in the increased IMPORTATION of TEAS, by the EAST INDIA TEA COMPANY, whereby the finest descriptions are brought within the reach of all. Strong Tea, the leaf not coloured, from 2s.; good family Tea, 3s. to 3s. 4d.; rich Souchong, last season's, 3s. 5d.; finest kinds from 4s. Offices, 9, Great St. Helen's Churchyard, Bishopsgate.

CHOICE PORT OF 1858 VINTAGE—THE COMET YEAR.

HEDGES & BUTLER have imported a large quantity of this valuable Wine, respecting which it is the general opinion that it will equal the celebrated comet year of 1811. It is increasing in value, and the time must soon arrive when Port of this distinguished vintage will be at double its present price. Messrs. Hedges & Butler are now offering it at 36s., 42s., and 48s. per dozen.

Pure sound Claret, with considerable flavour,

Superior Claret 36s. 42s. 48s. 60s. 72s.

Good Dinner Sherry 24s. 30s. "

Superior Pale, Golden, or Brown Sherry 36s. 42s. 48s. "

Port, from first-class Shippers, 36s. 42s. 48s. 60s. "

Hock and Moselle ... 30s. 36s. 42s. 60s. to 120s. "

Sparkling ditto 60s. 66s. 78s. "

Sparkling Champagne ... 42s. 48s. 60s. 66s. 78s. "

Fine old Sack, rare White Port, Imperial Tokay, Malmsey, Frontignac, Constantia, Vermuth, and other rare Wines.

Fine Old Pale Cognac Brandy, 60s. and 72s. per dozen.

On receipt of a Post-office Order or reference, any quantity, with a priced List of all other Wines, will be forwarded immediately by

HEDGES & BUTLER,

London, 155, Regent-Street, W.,

Brighton, 30, King's-road,

(Originally established A.D. 1667.)

The Best Remedy for Diminishing Nervous Excitement, Allaying Pain, Procuring Tranquillity and Repose, especially efficacious in Diarrhoea, Cholera, Dysentery, Cholice, Fever, &c.

THE CELEBRATED SEDATIVE AND ANTISPASMODIC, introduced to the use of the Medical Profession and the Public, with extraordinary success, by Captain JEREMIE, H.M. Army, and Opium Department, Bengal. Prepared only by

SAVORY & MOORE,

Chemists to the Queen and Her Majesty's Army.

Opinions and official Reports of Eminent Physicians and Surgeons, Officers of the Army, Professors of Chemistry and Medicine, Merchants, and Families, accompany each Bottle.

N.B.—A Novel and Important Feature to distinguish the Genuine from Fictitious Preparations consists in the use of Patent Safety Bottles, with an ingenious contrivance, which checks the flow, and prevents an overdose being accidentally taken.

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No. 64.]

SATURDAY, SEPTEMBER 21, 1861.

[Vol. III.]

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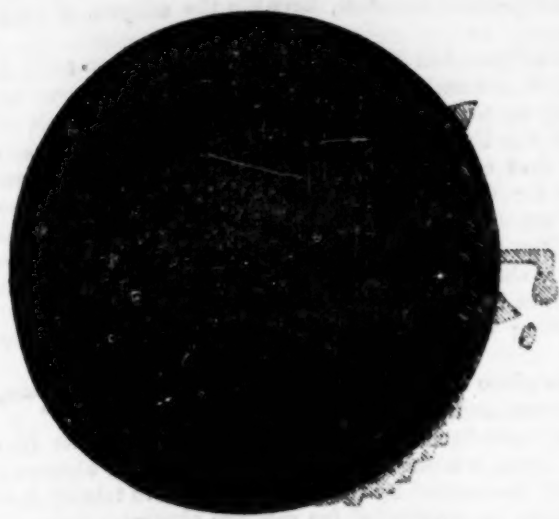


FIG. 3, 1851.—Airy, Göttenburg. (III.)

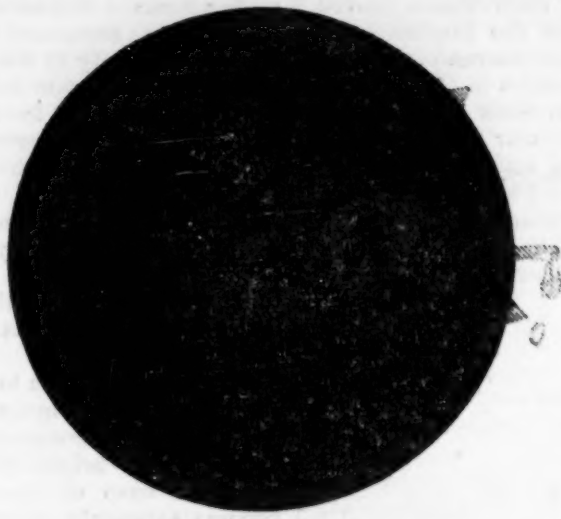


FIG. 2, 1851.—Airy, Göttenburg. (II.)

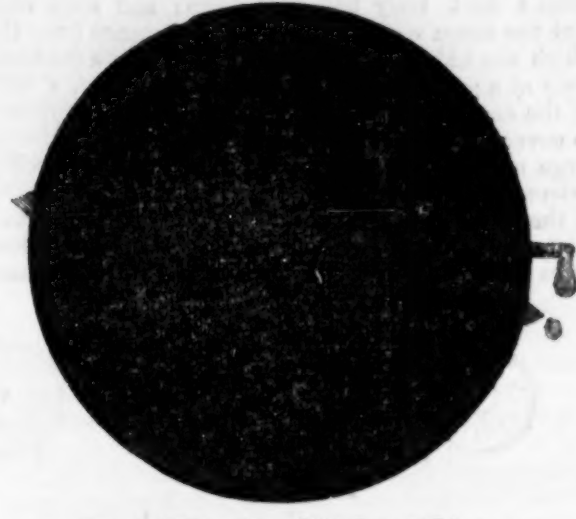


FIG. 1, 1851.—Airy, Göttenburg. (I.)



FIG. 7, 1860.—Oom, Poles, and Weedon, Miranda.

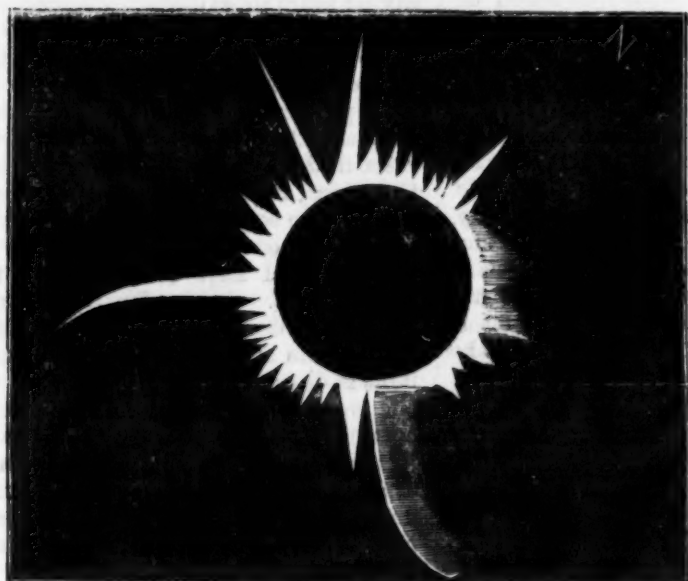


FIG. 12, 1860.—Galton, Logrono.

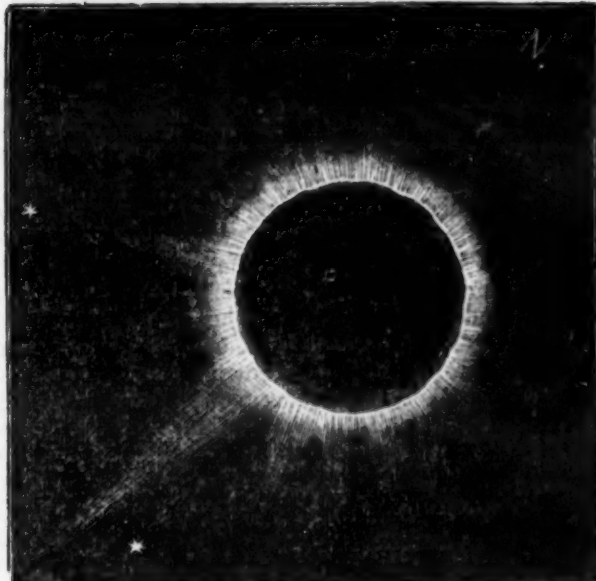


FIG. 5, 1860.—Bonomi, Miranda.

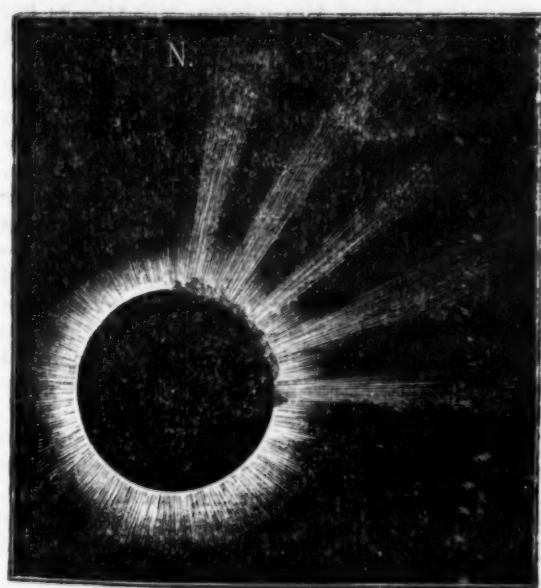


FIG. 10, 1860.—Plantamour, Castellon de la Plana. (III.)



FIG. 9, 1860.—Plantamour, Castellon de la Plana. (II.)

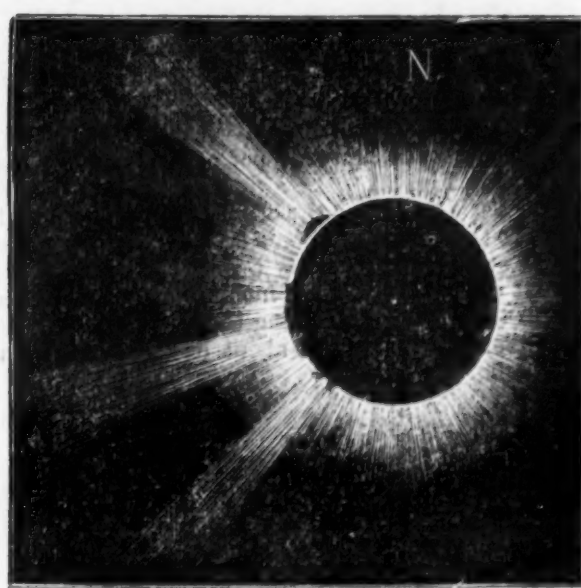


FIG. 8, 1860.—Plantamour, Castellon de la Plana. (I.)

THE scene at the Astronomer Royal's lecture on the late solar eclipse at the British Association meeting at Manchester was perfectly indescribable. The great Free Trade Hall was so densely crowded that even the reporters for the press took their notes standing. Not only is Mr. Airy universally respected for his genius, and celebrated as one of the most earnest astronomers that ever existed, but on no previous occasion has he given expression to his own views on that rare condition and those exceptionally heightened phenomena with which, from peculiar circumstances, the last eclipse of the sun (1860) was invested. It was not, therefore, only the natural curiosity to see and hear a man of such eminence that drew such a brilliant and attentive multitude together; but people were brought there in a spirit of earnest inquiry to learn the latest truths elicited by that most glorious of all investigations—the study of the phenomena of celestial space.

The great organ, which, on soirée nights, has pealed forth its deep-toned music, was hidden by gigantic diagrams; a working model, showing the planes of the orbits of the earth and moon, stood at the top of the platform stairs. In the gallery above sat the committee, looking down on the sea of human intellect below. By the electric light in the gallery stood Dr. Tyndall, and those who recognized his face knew how brilliantly he would manipulate it when De la Rue's photographs were to be magnified on the screen. Manchester people may not

know the doctor's skill, but Londoners who have seen him at the Royal Institution know well there is no man can manipulate it like him. There was but one regret that ever can be expressed on the memorable occasion of this lecture. It is that the Astronomer's voice was not powerful enough to reach through the hall; but, extraordinary to say, although he could not have been more than occasionally heard at the distant part, not a person left the room, but stayed straining their ears until the organ, pealing forth behind the screen of diagrams, told that the lecture was ended.

As the Astronomer Royal descended from the gallery to the platform he was greeted, as was to be expected, with much applause. Acknowledging this, he commenced his subject with all the ease and lightness of action which all so much admire in Faraday. Astronomy in his hands seemed what natural philosophy is in the hands of the great man of the Royal Institution. Taking his stand on the top of the platform stairs, Mr. Airy said:—

"When the authorities of the British Association wished me to make a statement of the information obtained by the observation of the total solar eclipse of 1860, I felt at once that it would not do to confine myself to the phenomena of that year. There were remarkable eclipses in 1842, 1850, 1851, and 1858; and indeed, with that of 1842, a new epoch in the science of total eclipses was



inaugurated. Some observations were then made which have since elicited an extreme anxiety for further information. What have been termed "red flames," or large red prominences, were observed. These were important objects and it was essential to get the legitimate deductions from them.

"But first, before I proceed in that inquiry, I would state generally how eclipses are produced. When men first observed eclipses there was no difficulty in perceiving that the eclipse was caused by the interposition of the moon's dark body before the sun; and soon subsequent observations proved that the moon was not at the same distance from the earth as the luminous sun which she hid: that it was a small body at a moderate distance concealing a large body at a great distance; and that, therefore, a trifling alteration in the distance of the small body (the moon) might make it appear either so small as to appear to cover only the central parts of the sun, producing an annular eclipse, or so large as to cover the whole of the sun, producing a total eclipse. Here the Astronomer Royal showed, by the working model, how, according to the position of the moon in her orbit, and because of the peculiar inclinations of the earth's orbit and the moon's orbit, these not being coincident, the light of the sun sometimes passed above the moon (Fig. 20), and sometimes below it (Fig. 21), and



FIG. 20.



FIG. 21.

therefore there are circumstances other than of size, that influence the condition of eclipses; there are the distance and direction of the moon, and which both have their influences on the conditions in which the sun is wholly screened or only partially hidden.

"By astronomers the earth and the moon, as revolving round the sun, must be treated as independent planets; but in relation to their apparent motions, people on the earth say that the moon revolves round the earth, while the people in the moon, if there are any there, say the earth revolves round the moon. When two bodies thus attracting each other and revolving round each other are subject also to the attraction of the sun, it may be readily seen their motion is not of a simple kind; and in order to give some idea of these motions, I have had this orrery constructed, in which one circular wire represents the orbit of the moon as she slides round the earth; while the annual motion of the earth and its distinct orbit are represented by the supporting board on which the earth and the moon's orbit are made to revolve round the central ball or sun. Now the orbit of the moon round the earth has not the earth for a centre, but the moon's orbit is with respect to the earth eccentric, and she is therefore at times nearer the earth than at others. Moreover, the plane of the moon's orbit round the earth does not coincide with the plane of the earth's orbit round the sun, but is inclined to it. But there is this peculiarity with regard to the positions both of the direction of the eccentricity of orbit and the direction of the inclination of the plane; that, during a moderate time (as half a year), they have no respect to the sun, but maintain nearly unchanged directions in space. Thus, at the beginning of one half of a year, the moon's orbit with respect to the earth and

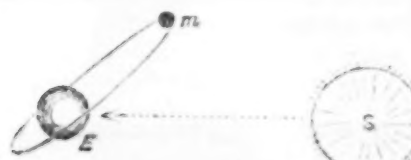


FIG. 22.



FIG. 23.

the sun may be this (Fig. 22); then at the end of the half-year it will be this (Fig. 23), the moon, however, not necessarily being in the same part of its orbit in Fig. 23 as in Fig. 22.

"When the earth and the orbit of the moon, then, have made a full revolution in respect to the sun, the moon's orbit will have returned to its original position in space as at Fig. 22. This is a general, but not strictly exact definition of the case. It differs in this: the inclined orbit of the moon does turn itself slowly round in the direction, meeting the moon's motion in her orbit, and performing its complete revolution in about eighteen years; thus, at the beginning of a

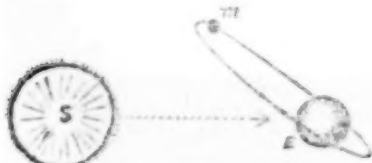


FIG. 24.



FIG. 25.

period of nine years, the moon's orbit may be in the position of Fig. 24; but at the end of the period it will be in the position of Fig. 25.

"Now, in the case of Fig. 22, when the moon, in revolving in her orbit, came into the space between the earth and the sun, her altitude would be so great above the earth's orbit that the light of the sun would pass underneath her, and no eclipse would take place. But in the case of Fig. 23, the moon, when running over that part of her orbit between the earth and the sun, would be so low that no eclipse would result as the sunlight passes over her. But while the earth and moon's orbit are revolving from the position of Fig. 22 to that of Fig. 23 (the inclination of the moon's orbit retaining nearly the same direction in space without regard to the sun), there will be one position in which the plane of the moon's orbit passes so nearly through the sun that the moon's shadow, when she arrives at the proper part of her orbit, will fall on the earth. Thus the times of eclipses correspond to certain periods in the solar year. But these periods change slowly from year to year, on account of the slow rotation of the moon's orbit mentioned above.

"At certain times, when the moon, the sun, and the earth may be on one line, no total eclipse may take place, because, on account of the long way the moon is off from the earth, her size is apparently small, and she does not cover the whole disc of the sun; hence in eclipses occurring under such circumstances, a portion more or less of the sun is seen all round, and we have an annular eclipse. If we suppose the eccentricity of the moon's orbit to be in the other direction, then the moon will look large, and completely cover the sun.

"There is a period of recurrence of eclipses of a very curious kind, well known to ancient astronomers by the name of the Saros, and used by them to predict future eclipses. It occupies 223 lunations, or 18 common years (excluding leap-days), 15 days, and 8 hours. At the end of that time the inclination of the moon's orbit has turned round almost exactly once, the eccentricity of the orbit has

turned round in the opposite direction almost exactly twice, and all the elements of an eclipse are in almost precisely the same state at the end of the Saros as at the beginning. But it is important to observe that the time is not only 18 years, 15 days, but it is also 8 hours. This produces an exception to perfect identity in the relation of these three bodies, namely, that it is not exactly the same side of the earth which is presented, and therefore it is not over exactly the same places on the surface of our globe that the shadow of the eclipse traverses. The period of the Saros is interesting on the present occasion, because the eclipses of 1842 and 1860 are separated by a Saros.

"The certainty in the date of eclipses has a most important bearing on ancient chronology. Certain dates, which are only known as occurring at or near an eclipse, are, indeed, fixed entirely by their means, such as the decisive battle of Arbela, and some occurrences in the Peloponnesian war. Astronomers calculate back by the lunar tables, and find out the exact position of the moon. Now suppose we could not answer for the moon's position and the date of the eclipse by the eight hours. If we were so far wrong, ancient chronology would be put out by eighteen years. But there are numerous means of checking the accuracy of the tables, partly by the observations of eclipses at a less distant date, which show that there cannot be an error approaching to eight hours; and ancient chronology, as depending on eclipses, may therefore be considered perfect.

But when we come to any one place on our globe where a total eclipse occurs,—where the black moon covers over completely the sun,—what do we see?"

Here the Astronomer Royal introduced the subject of Baily's beads (the succession of bright spots of light, which has been seen by some observers when the cusp of the sun, left uncovered by the moon just before totality, has become extremely narrow), which he attributed (as modern observers generally do) to the bright parts of the sun, seen between the mountains of the moon with a bad telescope. He spoke of them, as he said, to get rid of them, and would say no more about them. Continuing his lecture, he said,—"In 1816 there was a great total eclipse in the north of Europe; on the last day of the present year there will be a total eclipse, visible from the mouth of the Senegal through Tripoli to Greece; and I might add that in 1870 there will be another great total eclipse. Now, previous to 1842 people did not know what was to be seen, and comparatively little attention was paid to the subject. On that occasion only two astronomers went from England to observe it; Baily to Pavia, and I (Airy) to Turin. On the Continent, Schumacher went to Vienna, and Arago to his native place, Perpignan. We went to see Baily's beads, and we saw a total eclipse. No degree of eclipse, except that of totality, can give any idea of what it is when the totality does come. From what I have seen of three total eclipses, I know of no simile that will give an idea. As the darkness proceeds it puts on a most peculiar appearance. It is an odd darkness. The obscuration is not like that of a cloudy day, because then the full sun is shining somewhere around, or on the clouds; but in an eclipse the light is destroyed, it does not exist. As the eclipse proceeded, a vast and mighty shadow appeared in such force that the people who witnessed it shouted, "It is coming." But on looking up to the sun, or where the sun should be, his beaming light was gone—a great black patch had blotted it out. That was the moon, and around her radiated into space a beautiful corona. So unnatural was the darkness, that it seemed as if the sky had been removed, or as if a black plaster had been put on it. The change was astounding, and the quantity of light left very small.

"By comparing the light of the corona with a candle, it appeared to be about equal to that of twilight when the sun is about 7° below the horizon. There was, however, a brilliant light generally at the horizon, showing that there was light around in space. One observer has stated (and there is no doubt of the fact) that the shadow of the person, cast by the light of the corona, was visible; but generally no such shadow was seen, and all agree that the darkness was so great that it was hard to walk.

"Numerous questions, not in any way settled, were originated, then, at that total eclipse (1842). We were partly prepared for some phenomena; but when the telescopes were turned towards the hidden sun, there were seen what nobody was prepared for—the "red flames" projecting from the edge of the black moon. Astronomers were universally excited. What were these "red flames"? For anything for which he is not prepared, it is very difficult for a person to observe correctly; and from those observations then made it could not be told if these "red flames" were on the moon or on the sun. One person declared he had seen them upon the face of the moon; but it turned out he had observed them with an opera-glass, magnifying only four times. Such an individual ought to be expelled from the society of observers. Statements ought never to be published rashly; and before they are made, their authors ought to take care that their observations are made with proper instruments.

"There were seemingly four of these appearances on that occasion round the moon, but no one saw all four at any one time; and, as far as the questions were concerned, what they were, and to which body, sun or moon, did they belong, the observations made at that time gave no answer, and all that astronomers could do was to wait for the eclipse that was coming in nine years' time, and observe that better.

"This brought them, then, to the eclipse of 1851. But before this came, a total eclipse occurred in 1850; it was not visible here, but was to be seen in the southern hemisphere. This was observed by the officers of a French cruiser, and not only were red flames seen, but red clouds detached. A little before this astronomers had looked back into history for the records of such phenomena, and had found two instances. One in which Captain Stanyan had communicated to Flamsteed his observations of some red objects during a total eclipse; another was in the account of the total eclipse of 1733, in the "Philosophical Transactions," observed by the Swedish astronomer Vassenius, at Göttenburg; but it is difficult from these accounts to say if they were projections or clouds which were seen. So all on this point was uncertainty in 1851, when several English observers, including myself (Airy), went to Sweden, and other continental astronomers elsewhere to different stations. Russia sent observers to Poland; and altogether a good collection of observations were made.

"While on the subject of this eclipse, I will make some remarks which apply not only to the observations of 1851, but to some of 1860. A large portion of the audience must have been attracted by the beauties of experimental philosophy; as exhibited in the lecture of a few evenings past; how precisely the experiments were made, and how perfectly their results could be seen. How different is the observation of celestial phenomena! All there is uncertainty and difference of opinion, and the conflict of statements produces the greatest chaos imaginable. To reconcile these accounts, the character required is not an astronomer but a police magistrate, accustomed to judge on contradictory evidence, and he should be accompanied by a medical man accustomed to nervous diseases. What has generally happened in total eclipses? Observers, perhaps, have made a long and laborious journey; they are inconveniently stationed on a hill; they know that the principal phenomena will be over in three minutes, and they are wound up to the highest state of excitement, not only because the time of observation

will be soon over, but also because there are so many things to observe. It seems not possible to put their feelings sufficiently under restraint. If people could do that, they would overcome one great difficulty, but not the other."

Mr. Airy then narrated an anecdote of the officers of a French corvette, in the eclipse of 1842, who had been trained and drilled for the event; but when it came on, their discipline gave way, and there were no observations taken.

"Of the eclipse of 1851, the three drawings, Figs. 1, 2, 3, represent the observations taken at Göttingen by me (Airy) at the three periods of totality,—the beginning, middle, end; and the diagrams are arranged from right to left, because the moon's apparent motion was in that direction. In the first, prominences were seen both on the right and on the left side of the moon. In the middle stage the prominence on the left side had disappeared, and a new prominence had arisen on the right side. In the third stage the new prominence on the right side had become more conspicuous, and, shortly before the sun's disc was uncovered, was revealed a sierra of prominences. All these appearances are perfectly in harmony with the supposition that the prominences are connected with the sun. But there was something so strange in the form of the prominences as to compel attention. First there was a detached cloud, and next there was one of the red prominences bent into an elbow. The accounts of this bent prominence or "bomerang" are curiously discordant. One observer saw it bent as is shown in the diagrams, another saw it straight, and inclined to the limb of the moon; and it is remarkable that three of the most discordant representations are given by three observers of some experience (Lieutenant Pettersen, of the Swedish Navy, Professor Chevallier, and Airy), all at the same town, Göttingen. This appears to show clearly that the discordances are purely personal. A most careful and cool observer (M. Otto Struve) at Lomja, in Russian Poland, a station the most distant from mine, saw it in precisely the same form in which I saw it at Göttingen. One observer saw the prominence change from the form of a bent elbow to that of a straightened arm; another saw it change from the straight arm to the bent elbow. From what I saw and learned, I do not believe that in the short lapse of time between our observations, it changed at all; but I believe this and other similar statements to be fictions, generated in the hurry and excitement of observation. There is applicable, as a test whether the red prominences belong to the sun or not, instrumental means of measuring their increase or decrease under the eye; we can also calculate with accuracy what ought to be their progress in a minute of time if really attached to the sun. One observer did make these observations and calculations with great exactness; M. Otto Struve observed the changes of two prominences, and compared them with computations—one seemed to change a little too fast, and the other a little too slow. Others were not satisfied, having obtained measures which appeared discordant with calculations; others again raised the theory that the red prominences were not flames at all, but occasioned by an interference of the rays of light. A few words on the subject of the interference will be required to illustrate this point.

"If we can convert one spot of light into two spots, as we can by a prism, and if we cause the two cones of light from the two spots to mingle, darkness is produced where they overlap, and this is the fundamental experiment of the theory of light. But what applies to the light from two points applies also to the light of a number of points, as when a sunbeam passes the edge of a wall, or comes through a narrow opening or chink. If the last be received on a wall, the light may be surrounded by a fringe of colour. All is perfectly calculable; there is no doubt whatever in explaining it.

"Now that there is any reality in the idea of those persons who offer, as an explanation of the red prominences, this principle of interference, of whose detailed application they give no account, I deny. I challenge them to produce any method by which those effects can be produced. We can, as has been said, produce blackness by the mixture of light from two spots; but if the eye be placed at the spot where it is exhibited, then it does not see blackness, but two spots of light. So in many ways we can, by diffraction, produce colours, can produce long spectra, and other effects; but when the eye sees the diffracting edge well defined, it sees no colours nor spectra. Moreover, there is another difficulty: when colours are produced by diffraction, their outline is never firm and hard, as is that of the red prominences; but the intensity of their light diminishes very gradually towards their boundary. On the whole, the theory, as applied to the prominences, is impossible. Diffraction is thus, by those theorists, used in a way which is not understood, and in a manner which is beyond comprehending.

"The eclipse of 1858 was observed in Brazil, but not under favourable circumstances. Admiral Mathieu distinctly describes the red prominences as preserving their form unaltered, as if they were solid. Liais says the prominences were white; and this statement was a puzzle. One or two such statements were made also in 1860. But in those cases which were subsequently inquired into, it was found that such observers had defective vision for colours.

"We now arrive at 1860. Its approaching course was known to be as on the annexed map (Fig. 4). At sunrise the shadow would be over Vancouver's

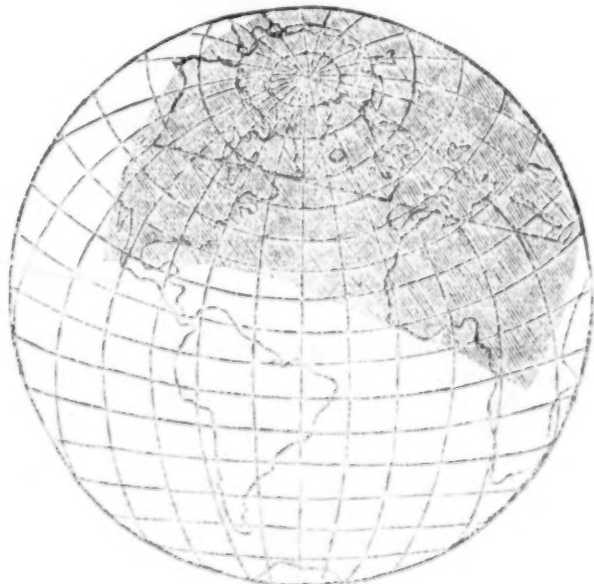


Fig. 4, 1860.

Island, thence passing over Spain towards the Red Sea, where it terminated at sunset. Observers sent out by different Governments and different individuals took journeys to the places best adapted for successfully seeing it.

"The French astronomical staff to the central part of Spain had also a detachment in Algeria; and the Egyptians in Dongala; and there were English observers on the west coast of America and in Spain. Arrangements were made by myself as the official astronomer to consider what were the best methods

and means of observing. We had in England no salaried academy whose services could be commanded, as in France, but we had a number of animated amateur philosophers; and I am proud to say the best instruments were produced by merchants. It appeared best to recommend to Government to carry our amateur philosophers to and from the ports of Bilbao and Santander in Spain, and the finest transport ship in the British Navy, the *Himalaya*, was granted for the purpose. Everything which could make the voyage agreeable to the party was most liberally provided by the Admiralty. It had been understood as a condition of admission of amateurs, that each should be prepared with adequate instruments, and should have a distinct object of observation; and in meetings on the deck of the *Himalaya*, the course of proceedings was in general arranged. Things would, perhaps, have been done a little better, if all observers could have had a drilling beforehand; but as it was, a great deal was done, and was well done. Some of the party were astronomers, some were not, but of these we were glad for the subsidiary work.

"As soon as the arrangements for the expedition were known, the authorities of the railway in course of construction from Bilbao to the valley of the Ebro offered their assistance, and Mr. Vignoles, the engineer-in-chief of the railway, tendered his powerful aid. With his help, parties of astronomers with their cumbersome instruments were conveyed where otherwise it would have been difficult to find means of conveyance; and the hospitality with which the observers were received in his house, and in the houses of his principal assistants, will not be easily forgotten. Others went by the assistance of the railway authorities from Santander towards Burgos, and some travelled at their own expense to Burgos along the highway from France. Thus Spain was well sprinkled with observers."

Mr. Airy then called attention, in the first instance, to the diagrams exhibiting the corona, which, as he remarked, presented a singular mass of discordance. One observer declared that there was a uniform ring of light touching the moon, while another asserted that the texture of the corona was radial to the moon's very edge; one reported the colour to be reddish, while another estimated it at pure white; at the same town (Valencia), one observer related, that the rays of the corona were in a state of perpetual quivering, while another has formally registered that they were perfectly at rest. Proceeding then to individual drawings, he remarked, that the careful drawing by Mr. Bonomi (No. 5) showed a long horn; he remarked also in that drawing the planets Venus and Jupiter, then very close to the sun, which were seen in great splendour in a degree of proximity where they could not possibly have been seen, except through an unilluminated atmosphere. (Nine stars and planets were seen at Mr. Airy's own station).

"This diagram (Mr. Weiler's, No. 6) was the most curious of them all. What was it the observer had seen? It showed what strange things imperfect observa-

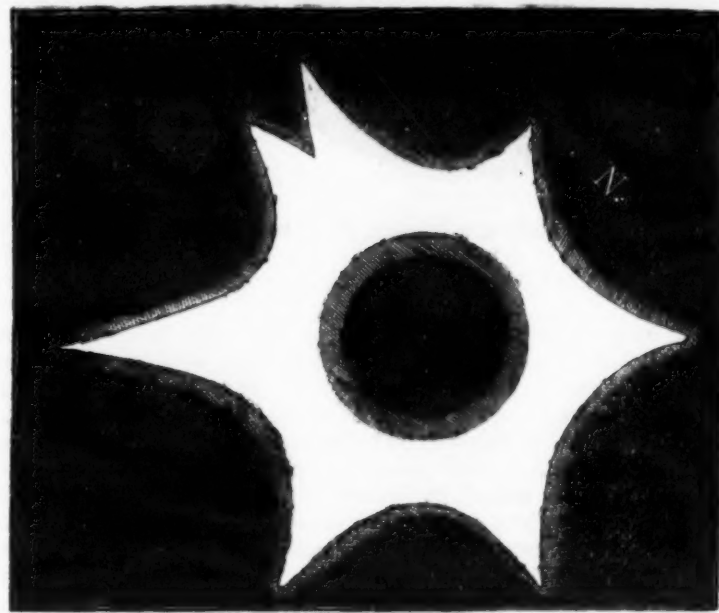


Fig. 6, 1860.—Weiler, *Unice*.

tion and bad drawing might produce. The great horn might, perhaps, be intended for one of the rays, while the undulating fringes might represent the boundaries of many little horns. However, so it reached me, and I can give no farther account of it.

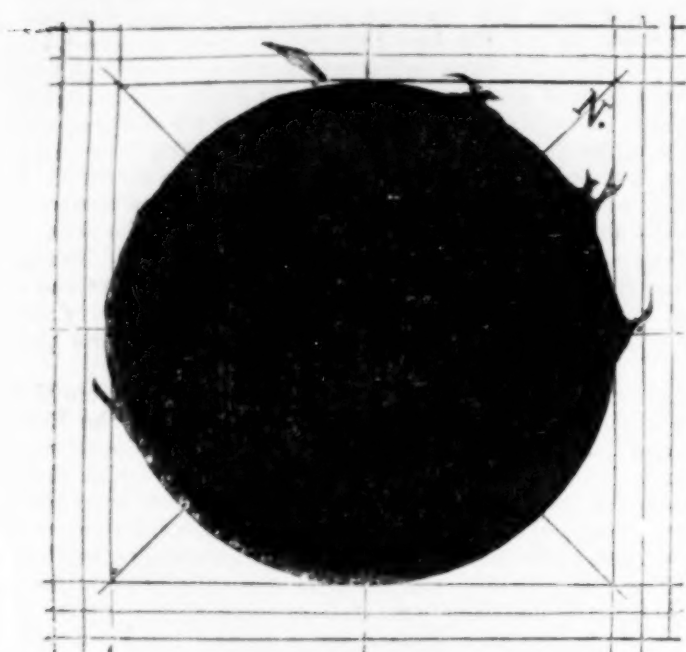
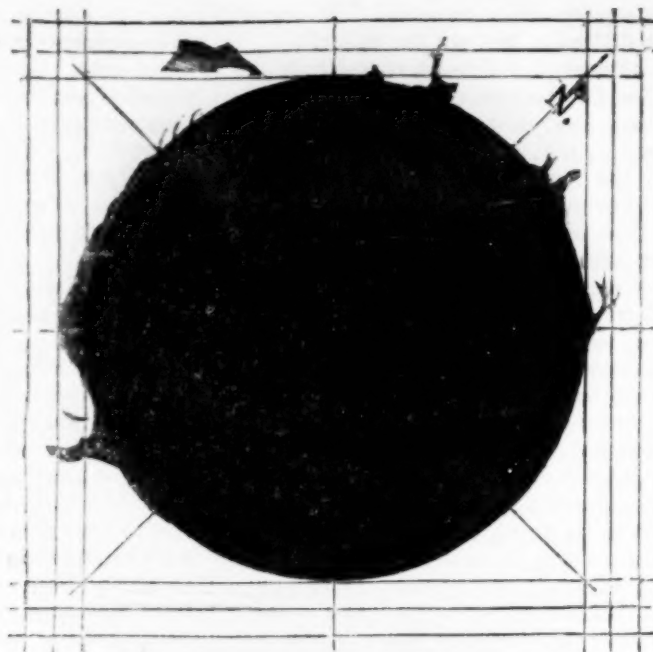
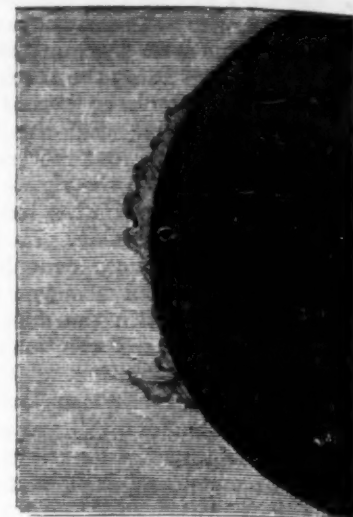
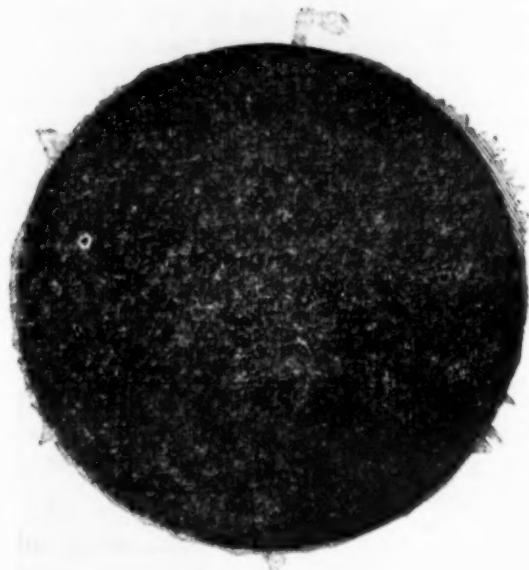
"The next (No. 7) is by Lieutenant Oom, and it is nearly a fac-simile of the drawing made by Mr. Weedon, an intelligent superintendent of the railway works. These (No. 12, from Mr. Galton, as also No. 11, from Mr. Murray,) are very



Fig. 11, 1860.—Murray, *Llodia*.

extraordinary in appearance. There is the curious coincidence in all these observations, made at a great many miles apart, of the curved horn, but what it is caused by I cannot tell, and the puzzle is the greater because of the discordance of one observer with another.

"The following three drawings (Nos. 8, 9, 10) are by Professor Plantamour, who went from Geneva to the east coast of Spain. As the moon entered on the right,

FIG. 16, 1860.—*De la Rue, Rica Bellora.* (II.)FIG. 15, 1860.—*De la Rue, Rica Bellora.* (I.)FIG. 13, 1860.—*Fearnley, Bezana.* (I.)FIG. 18, 1860.—*Richards & Parsons, Puget Sound.*FIG. 17, 1860.—*Aguilar, Desierto de las Palmas.*FIG. 14, 1860.—*Fearnley, Bezana.* (II.)

three of these rays occurred on the left; and when the moon was leaving the sun's disc, rays were seen on the right. This seemed to show that the appearance was produced by a cloud or cloudy atmosphere between us and the moon. In our atmosphere there were sixty or eighty miles of darkness all round, and these appearances could not be formed by refraction there. Is there, then, an atmosphere all the way to the moon? There is nothing else to explain them, as far as I know, and I think this does. Polarization supports it also. When light is not reflected, it is vulgar white light; but when reflected from the surface of a transparent medium, it puts on that modification known as polarization. When, therefore, we see it polarized, we have strong reason to think that the light has been reflected, and hence, by something like an atmosphere between the earth and the moon."

Mr. Airy, with the assistance of Dr. Tyndall, then exhibited an experiment, illustrating the nature of polarization. By means of the electric light, a spot of light was thrown directly on a screen; and when a doubly-refracting prism was interposed, this spot was converted into two; and as the prism was made to revolve, the two images revolved round each other without alteration of their intensity of light. But when the electric light was first reflected from the surface of unsilvered glass, and then thrown on the screen, the interposition of the doubly-refracting prism converted the spot of light into two, whose intensity was usually unequal; and as the prism was turned, the intensity of each underwent remarkable changes, sometimes vanishing entirely. When a plate of mica was interposed in rear of the prism, singular colours were produced. This experiment was exhibited as showing that we have the means of detecting experimentally the modification of light, which is usually produced by reflection.

"This experiment shows well the property of light produced by reflection, and if the light from the corona exhibits corresponding conditions, we may with great probability infer that the light from it has been reflected. The observers of the eclipse were prepared for this, and some gentlemen accordingly occupied themselves in observing if the light from the corona was polarized. The result of our English observations was that the light was polarized, but it was not determined in what direction. But M. Prazmowski succeeded in making out that the polarization was by reflection in the plane of the rays of the corona, and this confirms the opinion that the light of the sun was reflected by some medium, and that an atmosphere extends to the moon.

"Attention was then called to the red prominences, which were seen in great beauty. In the diagrams the letter N means north, that is, it indicates that point in the heavens called the North-pole, and the object of its use is to assimilate the observations from different places with each other, some being made in the morning, others in the afternoon; and these being inclined in different directions, it was necessary to turn some of them round and to bring the bearings of all to a fixed standard in order to compare the observations.

"Figs. 13 and 14, by Fearnley, show well the character of a single assemblage of prominences, and the change which it underwent.

"The principal question was whether the red prominences observed belonged to the sun or the moon." The diagram (Fig. 19) represents the working model Mr. Airy used on this occasion, and our readers will understand its action better if they will cut a black paper disc, of the size of the circles *a* and *b*, to represent the moon, and then pass the black disc across the diagram of the sun with its red prominences, from right to left, as was done in Mr. Airy's model. They will then see that as the black moon passes over the white sun, it covers up the red prominences on the one side, at the same time exposing distinct red prominences

on the other. If the red prominences belonged to the moon, they would follow her in her course; if to the sun, they would be shortened on the one hand and lengthened on the other, it being remembered that, the sun having disappeared, the moon has become the standard of comparison. If, then, they are shortened and lengthened, they belong to the sun.

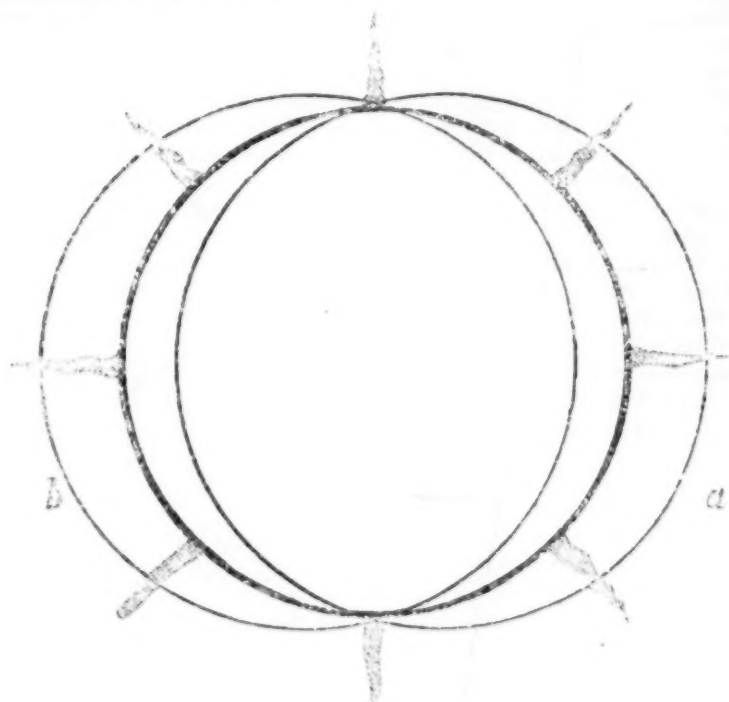


FIG. 19.

"But our 'interference' friends even here claim some causes for their being refractions of the rays of the sun. Another criterion, therefore, of their connection or non-connection with the sun, was pointed out by M. Faye. Suppose that there is a red prominence on the top of the sun. Then it was shown, by working the model, that at the beginning of totality this would appear to the left of the moon's central line; at the middle it would appear on the central line, and at the end to the right of the central line. If "interference" were supposed to be caused by some bizarre form of the moon's surface, it is inconceivable that the same bizarre form can exist over the extended portions of surface, above which a red projection may be seen to glide.

"We had then to observe the angular position of a prominence with respect to the moon's centre, but we could not see the moon's centre, only the circumference of her disc. A square of lines had then to be made in the field of view of the telescope, into which the moon's disc could be brought so as to be observed, and this was done by Mr. De la Rue. Fig. 15, representing the commencement of totality, and Fig. 16, the end of the totality, are from drawings made by him at those periods. Those drawings were not made for this purpose, but they are good evidence on the point.

"Now to call attention to this wheatsheaf-shaped prominence not far from the central line, and to the floating cloud. In Mr. De la Rue's first diagram, they are nearly at equal distances from the moon's central line. But in the second, the distance of the wheatsheaf has considerably increased, while that of the floating cloud has diminished. These appearances are totally inconsistent with the supposition that the red masses are caused by the moon, but they agree entirely with the supposition that they are attached to the sun, as the sun was apparently moving behind the moon from left to right.

"M. Bruhns, of Leipsic, saw the red prominences from a more eastern station in Spain; but not having the means of drawing at hand, he availed himself of reference to the cusps of the sun, for the red flames were so brilliant that they could be seen before the sun was covered and after the sun was uncovered. He adopted the method of comparing the place of the cusp at a registered time with that of the prominence. Our Lunar tables are so accurate, that he could afterwards, at any time, compute the place of the cusp of the sun, and could thus find, by means of the comparison already mentioned, the exact place of the prominence. So, also, when the sun reappeared, comparison was made between the second cusp then formed, and the same red prominence—the prominences being visible for nearly ten minutes after their appearance. He found, then, by the calculation of the places, that if the red prominence belonged to the moon, it had undergone, during the time of observation, a shift of 26° ; but if it belonged to the sun, it had not altered its position on the sun's surface so much as one degree, giving, therefore, the most irresistible evidence of its belonging to the sun.

"There was another class of observations of very great importance. In 1851 Busch, of Königsberg, tried the use of the daguerreotype, and succeeded to a certain degree. How desirable, then, it was to get the sun to form his own image; such means were far superior to the capabilities of man's eye to observe.

"Father Secchi, of Rome, one of our ablest observers, was struck with this idea, and which had occurred also to other persons. Mr. De la Rue had offered to take photographs; and partly at his own expense, partly by a grant of money from the Royal Society, he conveyed to Spain the famous Kew heliograph, and succeeded in taking two large impressions. Father Secchi also took five small ones. Secchi was anxious for a comparison of these results, to make sure whether the prominences were identical as seen at different places; for haste, prejudice, difference of instruments, and other causes, might influence the statements of the results obtained by mere eye-observations. He submitted with great care copies of Mr. De la Rue's photographs to rigorous comparison, and the results were entirely confirmatory of their identity. The changes in the position of the red prominences, with respect to the moon's disc, had been carefully measured, both on Secchi's and on De la Rue's photographs, and had been found perfectly conformable to the idea of their being connected with the sun.

"Professor Plantamour had adopted the optical theory, and had supported it by showing (as he conceived) from his own observations, that the rate of increase and decrease of the prominences observed by himself did not correspond with the computed rate of increase and decrease. But Father Secchi, whose photographs were taken in a locality at a small distance, has shown that the supposed observations are totally irreconcilable with the photographs, and it is necessary to suppose large errors in the appreciation of the time. [Several of the accounts received by Mr. Airy agree in recognizing the great difficulty of forming any estimate of time.] The value of photography is well shown in this instance.

"It appeared very desirable to ascertain whether the prominences underwent any change between the time when the shadow touched the earth, and the time when it passed over Spain.

"Some British officers on the west coast of America had observed the eclipse when the sun was only two degrees above the horizon, Capt. Richards, of the Navy, and Capt. Parsons, of the Royal Engineers, and had sent an excellent drawing of what they saw. With this they could compare the observation of Aguilar on the east coast of Spain. (See Figs. 17 and 18.) We have thus careful observations at the extreme ends of the shadow's range. One being in the morning and one in the evening, it was necessary to twist one of the drawings considerably to make a comparison between them. Are the prominences on each the same? I cannot make out. Is it likely they have changed? Yes. There is two hours' difference in the time of the sun's conditions, and if the sun be boiling up, as I believe it to be, and if these prominences are fumes given off, they are likely to change; but while the eclipse was observable over Spain no change was perceived, nor is it likely it would be in so short a space.

"If, then, the red prominences belong to the sun, can we see them at other times? I have tried hard, by throwing the sun's image into a dark room, stopping out all light, and allowing all parts of the sun's light to pass out of sight, except the ring, where the prominences should be seen. Mr. Nasmyth contributed part of the apparatus. I have not, however, been able to see them. Thinking some benefit might arise from altitude, the apparatus was lent to Mr. Piazzi Smyth, and observations made on the Peak of Teneriffe, but not a trace of them could be got. Does this detract from the conclusions of astronomers? No. We cannot cut off the blaze of light which illuminates our atmosphere, and that is the real explanation."

Mr. Airy then detailed the arrangement of the telescope he took to Spain, and complimented Mr. De la Rue on the superior and ingenious mechanism he had applied to his instrument which he had mounted equatorially, and had supplied with clock-work motion to follow the sun in his motion. After explaining the action of Mr. De la Rue's contrivance, he recommended all telescopes for practical observations to be thus adapted, as the results were incomparably superior to anything that could be got by the most adroit handling.

Mr. De la Rue's photograph of the two phases of totality, and Mr. Pritchard's and Mr. De la Rue's sketches of the entire circumference of the sun, were then exhibited by the electric light, and Mr. Airy concluded his lecture with some pointed remarks on the fact of photography having not only recorded with superhuman accuracy the visible phenomena of the eclipse, but having recorded also phenomena invisible by any human eye. Mr. Airy was greeted with great applause, and after seeing a display of photographic pictures of the expedition by the electric light, the vast audience slowly dispersed.

ADVERSITY—ITS GOOD AND EVIL EFFECTS.—"It is said," observes the author of "Ashcombe Churchyard," "that adversity draws out the high, sublime virtues, and perhaps it may; but I think it blasts and nips the minor ones. A modicum of prosperity, on the other hand, develops many amiable little qualities in the heart. It is wonderful how kind, how considerate, how good-humoured, how generous even, you find people with whom everything goes well, whom the world applauds, and on whom fortune smiles benignantly. But failures, unmerited disasters, and honest endeavours, always attended with bad success, create cynics."

Reviews of Books.

ENGLAND IN THE ELEVENTH CENTURY.*

THE thin folio volume to which we desire to attract the attention of the public, viz., a fac-simile of that portion of "Domesday Book" relating to Cornwall—is interesting in many respects. It connects together two periods in English history that are in complete and striking contrast with each other—the years 1086 and 1861. We see in the latter, in the mere publication of the volume before us the perfection to which art and science have attained, and the wonders they can perform; the power, for instance, of producing any number of fac-similes of ancient MSS.; and then we have in the actual reproduction of the MS. of 1086, in all that relates to Cornwall, the consideration forced upon the mind that so insignificant at that time was the commerce of England, and so low the state of art, that the richest mineral production of Cornwall, its tin, is nowhere mentioned! And then we are to bear in mind that the very article to which no reference is made, because no profit was derived from it at the period at which Domesday Book was compiled, was the very article which had hundreds of years previously attracted attention to this portion of the globe, as the "tin islands." Full one thousand years prior to the compilation of the Domesday Book, a Latin author, Pomponius Mela, thus referred to Great Britain and its ancient inhabitants:—

"In Celtici aliquot sunt, quas, quia plumbo abundant, uno omnes nomine *Cassiterides* appellant" (lib. iii., c. 6).†

At the very outset of this volume, from the mere consideration of its title-page alone, and on finding that it refers to Cornwall in particular, the historical student is naturally led to inquire how it came to pass that the gripping avaricious Norman, sought for no revenue from the once well-known and world-celebrated tin mines of Cornwall. To account for the fact we must endeavour to ascertain what events had occurred previous to the Norman Conquest. The point has not escaped the inquiry of one of the most illustrious of English antiquarians. Sir Henry Ellis, in his invaluable work, "A General Introduction to Domesday Book," had observed that "no mention whatever of tin occurs in that part of the survey which relates to Cornwall," and he accounts for the omission by a statement which we give in his own words:—

"The conquest of Cornwall by Athelstan, it will be remembered, was not completed till the year 935. In 997 the province was ravaged by the Danes; and again, in 1068, by Godwin and Edmund, the sons of Harold, in their return to Ireland. These convulsions will probably account for the neglect of the Cornish tin mines in the eleventh century. Certain it is, that from the time when Cornwall was governed by its native earls, till after the formation of the Domesday survey, its product of tin must have been inconsiderable. Had Edward the Confessor received any revenue from the mines there can be no doubt but it would have been noticed in the Survey" (vol. i., p. 135).

Repeated invasions and incessant civil wars had reduced to a state of utter desolation and semi-barbarism—so far as regarded the fine arts—a land which the earliest of all the British historical writers, Gildas, describes as having been at one period the abode of luxury and refinement, covered with palaces, temples, baths, theatres, and statues, which, if we are to place confidence in his words, equalled those of imperial Rome itself in their magnificence. All had disappeared, and the Domesday Book itself was compiled, in order that the Conqueror might have an accurate account of the spoliated land, and draw from it for himself and his adherents the most ample revenue it could afford to give.

The contrast between the periods at which the original Domesday Survey was compiled and this wonderful fac-simile of a portion of its contents is not, however, the only interesting consideration suggested by its contents. They show something more than the mere decay and revival of the fine arts—the first the consequence of wars by invaders, and internal dissensions amongst the people; the latter the result of internal peace for centuries, and the working of the noblest constitution that the wit of man has devised, and a succession of favouring events ripened into reality.

The Domesday Book is suggestive of other thoughts. How, it may be asked, came it to be compiled? What is the Domesday Book itself? and what the political motives in which it originated?

"Domesday Book," says Sir Henry Ellis, "one of the most ancient Records of England, is the Register, from which judgment was to be given upon the value, tenure, and services of lands therein described," and he adds, "that the work was undertaken at a time subsequent to the total reduction of the island to William's authority."

The policy that influenced the Conqueror in having this book compiled is stated truly and accurately by the *Anglo-Saxon Chronicle*, under the date of the year 1085. The whole of the following extract is worthy of attention:—

"At the midwinter was the king (William) in Gloucester with his council, and held there his court five days. And afterwards the archbishop and clergy had a synod three days. There was Mauritius chosen Bishop of London, William of Norfolk, and Robert of Cheshire. These were all the king's clerks. After this had the king large meetings and very deep consultations with his council, about this land; how it was occupied, and by what sort of men. Then sent he his men over all England into each shire, commissioning them to find out 'How many hundreds of hides were in the shire, what land the king himself had, and what stock upon the land; or what dues he ought to have by the year from the shires.' Also he commissioned them to record, in writing, 'How much land his archbishops had, and his diocesan bishops, and his abbots, and his earls;' and, though I may be prolix and tedious, 'What, or how much, each man had who was an occupier of land in England, either in land or in stock, and how much money it were worth.' So very narrowly, indeed, did he commission them to trace it out, that there was not one single hide nor a yard of

* Domesday Book; or, the Great Survey of England, of William the Conqueror, A.D. MLXXXVI. Fac-simile of the part relating to Cornwall. Photo-zincographed by Her Majesty's Command at the Ordnance Survey Office, Southampton; Col. Sir H. James, R.E., F.R.S., &c., Director. 1861.

† "Cassiterides, id est Britannicas insulas" is the comment of Vossius on this passage.

land, nay, moreover (it is shameful to tell, though he thought it no shame to do it), not even an ox, nor a cow, nor a swine there left, that was not set down in his writ. And all the recorded particulars were afterwards brought to him.*

The work having been determined upon, it is interesting to know what was the precise task to be executed, and by whom it was performed. Sir H. Ellis affords the information desired:—

"For the adjusting of this Survey, certain commissioners, called the King's Justiciaries, were appointed. In folios 164 and 181 of the first volume of 'Domesday,' we find them designated as *Legati Regis*. Those for the Midland counties, at least, if not for all the districts, were Remigius, Bishop of Lincoln; Walter Giffard, Earl of Buckingham, Henry de Ferers, and Adam, the brother of Endo Dapifer, who probably associated to them some principal person in each shire. The inquisitors, it appears, upon the oaths of the sheriffs, the lords of each manor, the presbyters of every church, the reves of every hundred, the bailiffs and *six villans* of every village, were to inquire into the name of the place, who held it in the time of King Edward, who was the present possessor, how many hides in the manor, how many carrucates in demesne, how many homages, how many *villans*, how many *cotarii*, how many *servi*, what free-men, how many tenants in socage, what quantity of wood, how much meadow and pasture, what mills and fish-ponds, how much added or taken away, what the gross value in King Edward's time, what the present value, and how much each free-man or soch-man had or has. All this was to be triply estimated: first, as the estate was held in the time of the Confessor; then, as it was bestowed by King William; and thirdly, as its value stood at the formation of the Survey. The jurors were moreover to state whether any advance could be made in the value" (vol. i., pp. 18, 21, 22).

The "Domesday Book" may be regarded as an authentic record in one respect, that is, as to the quantity and value of land; but in another, and, in our judgment, a matter of still greater importance, as to the numbers and condition of the people, no reliance can be placed on it. It may be looked upon, to use the words of Sir H. Ellis, "as a fair record" of the owners and occupiers of land, as well as of the agricultural population in England in 1086; but it gives a very imperfect view of the whole of the population at that period. Its omissions, and the reasons for them, are thus referred to by Sir H. Ellis:—

"Amongst its omissions, the population of the cities and towns cannot fail to be observed. The King's own burgesses, whenever this occurred, were carefully registered, as well as those who belonged to tenants *in capite*; but further than these the Survey rarely goes; in fact, the information of the rent which was to be paid from the town was more important for the receipt of the Exchequer; and we have some towns represented as paying rent in which neither burgesses nor other residents are noticed. In Middlesex, pannage is returned for 16,535, in Hertfordshire for 30,705, and in Essex for 92,921 hogs, yet not a single swine-herd (a character so well known in the Saxon times) is entered in these counties. In the Norman period, as can be proved from records, the whole of Essex was, in a manner, one continued forest; yet once only in that county is a forester mentioned in the entry concerning Writtle. Salt-works, works for the production of lead and iron, mills, vineyards, fisheries, trade, and the manual arts, must have given occupation to thousands, who are unrecorded in the Survey. In some counties we have no mention of a single priest, even where churches are found; and scarcely any inmate of a monastery is recorded beyond the abbot or abbess, who stands as a tenant *in capite*. These remarks might be extended, but they are sufficient for their purpose. They apprise the reader that, in this point of view, the Domesday Survey is but a partial Register. It was not intended to be a record of the population further than was required for ascertaining the geld" (vol. ii., pp. 419, 420).

The imperfection of Domesday on these points is much to be lamented. We are deprived of the knowledge not only of the numbers and condition of the population at the period, but also of the decline in their strength and wealth, caused by the wars of William, as well as by his predecessors, the Danes and other northern invaders. A few instances will suffice to show this. The houses in the city of Chester which paid geld in King Edward's time were 487. At the time of the survey the number was less by 205, for the city "had been greatly wasted"—"valde enim erat vastata," says the Record. At Barnstaple "there were 23 houses wasted after King William landed in England"—"ibi sunt xxiii domus vastate postquam Rex venit in Angliam." In Lidford, forty houses are recorded to have been laid waste before William came to England. The Messrs. Lyson say "it is probable that this was in 997, when the town of Lidford was burned by the Danes." The number of houses in Dorchester in King Edward's time had been 172. At the time of the Survey they amounted to 88 only. In Bridport 120 houses had existed in King Edward's time; 100 only remained at the time of the Survey. The other twenty were so far destroyed that their inhabitants were unable to pay geld. Wareham contained 285 inhabited houses in the time of the Confessor, which had been reduced before the year 1056 to 135.†

Regretting the omissions in Domesday, we now turn to the portion of it that has been published, for the purpose of seeing if it will not afford that species of information which may be regarded as universally interesting. It will be sufficient for our present purpose to take a single extract from the published volume, which, it may be observed, being a literal transcript—line for line, word for word, point for point with the original, is in Latin, and, according to the manner of ancient MSS. in Latin, so contracted that it is impossible in mere printer's type to give to the general reader an accurate notion of how it is written, nor what are the difficulties to be surmounted before it can be read with facility.

The following is a portion of the translation supplied by Mr. Burtt, of the Public Record Office, to Colonel James, of the commencement of the Survey respecting Cornwall:—

"Here are noted those holding lands in Cornwall. I. King William. II. The Bishop of Exeter. III. The Church of Tavistock. IV. The Church of certain Saints. V. The Earl of Morton. VI. Judhail de Totenais. VII. Goscelin. The King holds Winetone. There were 15 hides in the time of King Edward. The land is 60 carrucates. Of it there is in demesne one hide, and there are two carrucates, and the *villani* have 3 hides, and 24 carrucates. There are 24 *villani*, and 11 *coliberti*, and 33 *borderii*, and 14 *servi*. There are 6 acres of meadow. Pasture 4 miles long and 2 miles wide. Wood one mile long, and half a mile

wide. It renders twelve pounds weighed and burnt. Of these 15 hides, the Earl of Moreton holds 11 hides. These were held by 17 *tainii* in the time of King Edward, who could not be separated from the manor."*

The words marked in italics—the "*tainii*," "*villani*," "*coliberti*," "*borderii*," and "*servi*"—are the designations of different classes of the population in 1086. Assuredly it must be interesting to know something of these ancient occupiers of the land, and what was the distinction between them.

The "*Tainii*," who held land "in the time of King Edward," and who, as we infer from the passage, had been superseded by the Norman Earl of Morton, were Saxon "*Thanes*," and of "*Thanes*" there were two kinds—greater and less,—the greater ranking with the highest nobility, and the others to be considered in the condition of our small landed gentry. According to the good old Anglo-Saxon laws and customs,—

"If a churl or husbandman throve, so that he had fully five hides of his own land, a church and a kitchen, a bell-house and a gate-house, a seat and a several office in the king's hall, then he was from thenceforth worthy of the rights of a thane. And a merchant might become a thane."†

Passing from the thanes, we come to the next designation of a particular class in society—"the villan." Originally "the villan" was a rustic slave. He was either annexed to the manor or land, or to the person of the lord, and transferable by deed from one owner to the other. He held a small portion of land to sustain himself and family, but it was at the will of his lord, who could dispossess him at any time, and for the occupation of this land he was bound to perform the meanest offices, such as carrying out manure, hedging and ditching, &c. The child of "a villan" was in the same bondage as his father; and yet, in process of time, "the villans" became copyholders; for "copyhold tenures," observes Sir Edward Coke, "though very meanly descended, yet come of an ancient house." It is plain that "the villan" was the highest of the servile classes, and stood upon the very limits of freedom. An undisturbed residence of a year and a day upon the king's demesne lands would enfranchise "a villan" who had fled from his lord.‡

The "*coliberti*" were a middle sort of tenants, between servile and free, or such as held their freedom of tenure on condition of performing certain works and services. "They are a class of persons," observes Potgessier, "fluctuating between freedom and slavery;"—"Genus sint inter servos et ingenuos fluctuans."§

Of the "*Borderii*" two different accounts are given. "They were," it is said by Bishop Kennett, "distinct from the *servi* and *villani*, and seem to be those of a less servile condition, who had a bord or cottage, with a small parcel of land allowed to them, on condition they should supply the lord with poultry and eggs, and other small provisions for his board and entertainment." Brady says, "they were drudges, and performed vile services, which were reserved by the lord upon a poor little house, and a small parcel of land, and might perhaps be domestic works, such as grinding, threshing, drawing water, cutting wood, &c." The same class of persons were not unknown in Germany, and Potgessier derives their name from the fact that they carried burdens upon their head, such as a bundle of faggots, &c., and such burden, he says, "in our language is called *eine Boerde*, and by others *eine Burde*."||

The last, lowest, and most degraded class of all were the "*servi*." The surest and most incontestable characteristic of "the serf" was this,—he was both body and goods the property of another—"Verissima est servitutis nota, esse in alterius proprietate, tam quod ad corpus, quam quod ad bona attinet." Such was undoubtedly the condition of the great mass of agricultural labourers in England in the year 1086. But was this condition of serfdom one of unmixed evil? It is well to know what is said and thought upon a point of grave importance by one of the most gifted of Anglo-Saxon scholars that ever adorned the literature of England by his writings. Here is the opinion expressed by the late John Mitchell Kemble:—

"Taking all the circumstances into consideration, I am disposed to think that the more material condition of the unfree population was not necessarily or generally one of great hardship. It seems doubtful whether the labour of the serf was practically more severe, or the remuneration much less than that of an agricultural labourer in this country at this day; his lord was bound to feed him for his own sake; and if, when old and worn out, he wished to rid himself of a useless burden, he could, by an act of emancipation, hand over his broken-down labourers to the care of a Church which, with all its faults, never totally lost sight of the Divine precepts of charity. . . . In the prose version of 'Salomon and Saturn,' it is said that every serf ought to receive yearly 730 loaves—that is, two loaves a day,—besides morning and noon meals; this cannot be said to be a very niggardly portion. Again, the valuable document entitled 'Rectitudines singularium personarum,' gives details respecting the allowances made to serfs in various prædial or domestic capacities, which would induce a belief not only that they were totally provided for, but even enabled by the exertions of skill and industry to lay up funds of their own towards the purchase of their freedom, the redemption of their children, or the alleviation of their own poverty."¶

These observations upon the state of England, and the condition of its population in the year 1086, have been suggested by a perusal of the first fourteen lines of the ancient MS., which is now re-produced in all the integrity of its original form by means of an art so new, that its very name was unknown and even unthought of a few years ago.

This volume is not merely a literary curiosity. It is something better. It is a faithful transcript of an ancient historical document, in which every line is a fact, and of interest to all persons wishing to know the state of England and the condition of its inhabitants in the year 1086. A copy of this work ought to be found in every public library in Europe.

* For the measures of land mentioned in this extract, see Ellis's "Introduction to Domesday Book," Vol. I., pp. 145, 146, 147, 148, and Kemble's "Saxons in England," Vol. I., pp. 457-462.

† See Ellis's "Introduction," vol. i., pp. 48, 49.

‡ Ellis, vol. i., pp. 64, 65, 74-79.

§ Potgessier, "De Statu Servorum," lib. iv., c. 14, sec. 12, p. 781.

|| Ellis, Vol. I., pp. 82, 83. Potgessier, lib. i., c. 4, sec. 23, p. 193.

¶ Kemble's "Saxons in England," vol. i., pp. 213-215.

* Ingram's Translations, pp. 289, 290.

† See Ellis's "General Introduction to Domesday Book," Vol. II., pp. 439-439.

THE AMERICAN CRISIS.*

JEAN JACQUES ROUSSEAU justly observes that no one ever became a great author by instinct. Yet, to judge by the practice of many among our contemporaries, the belief must be widely diffused that nothing is necessary to write a book but pen, ink, and paper. The most difficult by far of all arts is thought to be no art at all, so that without reflection, without experience, without learning, without fancy or imagination, people persuade themselves they can write because they can set down words one after another with or without meaning. Here, for example, is good Mr. Lempriere, of Pump-court in the Temple, who, having probably never wielded the pen before, grapples boldly with one of the most difficult questions of our times, respecting which, in point of real knowledge and understanding, he is about on a level with the Grand Lama of Tibet. His ideas and notions of right and wrong, of freedom and servitude, of human duties and human responsibilities, of the natural relations of man to man, and of the transcendent relations of man to God, are lamentably and irremediably confused. Whether he be an importation from the Southern States of the Union or a genuine Englishman born, we will not take upon us to decide; but, assuredly, had he been born in a sugar plantation, and cradled on a cotton gin by a negro nurse, he could not have been more incurably sophistical on the subject of slavery.

A necessary, perhaps the most indispensable qualification of a political writer is a profound and sensitive consciousness that he is dealing with the vital interests of millions of his fellow creatures. In such investigations as those in which he finds himself engaged, there is no room for pleasantry, for jesting, for satire, for mischievous casuistry, for special pleading; truth, and truth only, should be his guide, with a high sense of the sacredness of human rights, and the value of human happiness. Still, every man who can engage a printer, or find a channel for his lucubrations in any journal, high or low, fancies himself competent to decide magisterially on the great questions which now convulse the American republic. Mr. Lempriere rushes into the subject, and, while making a number of statements by way of explanation, explains nothing. No doubt there are many causes of dissension between the Northern and Southern divisions of the republic, but they are nearly all connected more or less with slavery. The North, in its enthusiasm for abolition, which, however, is of somewhat recent date, has no doubt been guilty of much exaggeration, and has put forward monstrous fictions to stimulate the weak and fanatical on both sides of the Atlantic. But this was no more than might have been expected; in times of violent commotion, no party, whether in politics or religion, adheres strictly to the truth; and in a case like the present, where the discussion concerned the sale of men and their conversion into what Mr. Lempriere coolly calls "property," the passions were sure to be roused, after which there could be no chance for reason.

We are by no means insensible to the difficulties by which the citizens of the Southern States are surrounded; we are aware that the results of the plan of negro emancipation, as carried out in the British West Indies, were not such as to allure other nations into the same course. We confess at once that the sudden and complete emancipation of the negroes might produce insuperable embarrassments in the Southern States. But these are not, by any means, the questions which infuriate the slave-owner or the abolitionist. The statesmen of the North have been perfectly willing to concede to their brethren of the South all the sympathy and consideration which the circumstances of their case demand; but there is a very great difference between making such acknowledgments and recognizing the claims of the South to involve the whole union for ever in the guilt of slavery; to spread the plague into all newly-created states, and to reduce the natives of Africa, originally captured and reduced to servitude by crime, to a level with cows and dogs, which, when they stray from home, may be followed and recovered, and brought back to their pens and kennels by force. Mr. Lempriere sees nothing objectionable in this view of the state of the Africans now held in subjection in America; but, on the contrary, sympathises strongly with the slave-owner in the losses, crosses, and inconveniences he has often to encounter when in pursuit of one of his fellow-creatures. It would be difficult to discover in any English work sentiments more ignoble and unbecoming an Englishman than those expressed in the following passage:—

"Previous to 1850 the separate States of the North had resisted the resumption of a slave who had escaped from his master—fourteen of them had passed laws in their State Legislatures to that effect. To meet the complaint urged by the owners of slaves using the fair legal argument that the law of the land was bound to protect their property, Webster, Clay, and others brought in an Act to enable the slave-owner to pursue his slave into any State in the Union, and to call on the federal authorities to assist him in recovering his property. Now, right or wrong, the law of the land did universally acknowledge the ownership of slaves, and the right accorded by this Act. 'The Fugitive Slave Act' was affirmed by a majority in the Senate and in Congress after a long and bitter contest, and approved by Fillmore, the then President. From this date commenced the disruption of the Union. The Federal officers, acting under this law, have been systematically resisted in the execution of their duty, even after the affirmation of it by the solemn judgment of the Supreme Court of Judicature of the United States.

"In almost every case the expense and hindrance cost the owner more in recovering his slave than the property was worth, while in many he lost it altogether, and not seldom his life too, in the pursuit of it according to law. Now, however we may deplore and protest against the tenure of slaveholders, we cannot, by any principle known to civilized nations, ignore the fact, that the first duty a citizen owes the State is obedience to its laws, and resistance against their execution is an offence against the whole State. But in the United States not only was such resistance applauded by the Northern States, but it was made expressly the ground of asserting an unconstitutional supremacy over their equals in the Confederate Union. It was the injustice felt to be so done, and the right according to law which the South undoubtedly had, that swayed the nation in 1852 in their choice of Pierce—a New Hampshire candidate, who was in favour of carrying out the laws of the land—in preference to General Scott, the present commander of the Northern forces; and again, in 1856, in electing Buchanan, a Pennsylvanian, who avowed his intention of carrying out the law, by a large

majority over Colonel Fremont. This proves incontestably that up to that date moderate and constitutional views prevailed in the body of the national electors; and the South, although they did not consider they had their full and fair share in the rights and privileges of the nation, yet acquiesced, in the hope that moderation and constitutional equity would guide the spirit of legislation."

If any Northern man should steal from a Southern a leg of pork or a sirloin of beef, the latter would be rightfully empowered by the law to follow his property and recover it at all hazards; but when a Southern man of dingy complexion, held unjustly in captivity, effects his escape, and takes refuge among Christians beyond the proper legal jurisdiction of his former oppressor, it is a strange confusion of terms to speak of him as of the leg of pork, and to maintain that the tyrant who had previously held him in thralldom should call him property, and be permitted to pursue and retake him as a piece of inanimate matter. By way of deprecating the scorn and contempt which all Englishmen worthy of the name must feel for the proprietors of men, Mr. Lempriere deplores and protests against the tenure of slave-holders. But this is mere flimsy sophistry. Slavery is a crime, or it is not; if it be not, there is no reason to deplore and protest; if it be, this deploring and protesting are insufficient—the individuals guilty of the offence should be removed beyond the limits of our sympathy, and regarded as malefactors. It is but a poor excuse for the offence to plead that it is perpetrated legally, because human laws are not competent to invest with the character of right what the laws of God and Nature condemn as wrong. No doubt there are situations in this world which constrain us to tolerate established evils; but, unless our minds are corrupted by this toleration, we never cease to regard them as evils, or to make such efforts as may be in our power for their removal. The fugitive slave law, which has left an indelible stain on the memories of Webster and Clay, was passed and attempted to be carried out in defiance of the sentiments of the American people, who obstructed its working, detested its authors, and threw in the way of the slave-hunters so many obstacles that the bare enumeration of their distresses touches the sensitive heart of Mr. Lempriere.

By way of variety, our sage of Pump-court enters into a disquisition on cottons. The subject is interesting, especially at this moment; and if a correct appreciation of his own powers had led him to compile a little modest volume on the subject, it might have met with success. Questions of state policy should be abandoned to statesmen, and those who, without being engaged in public affairs, possess the knowledge and the intellect which would qualify them to play their part in the political world with honour. A man like Mr. Lempriere, with limited knowledge, and still more limited capacity, ought to feel that topics like these are far too vast and ponderous for his grasp. It is different with the supply of cotton, which any man with industry sufficient to toil through a Blue-book, and the reports of the Manchester Association, may master, so as to enable him to write intelligibly if not agreeably about it. Let us take, albeit at second hand, a description of the cotton-fields of America, drawn up originally by Mr. Kettell, and appropriated in the volume before us by Mr. Lempriere:—

"Such has been the improvement in the cotton culture since 1852, that the number of acres which each labourer can cultivate, and the produce per acre, has been largely increased, and the quality of the staple or fibre very much improved. The cotton which was produced thirty years ago would not now be marketable. Under the improved system a labourer will now cultivate twenty acres of cotton with as much ease as he formerly cultivated ten. Immense tracts of country that, ten years ago, were not considered sufficiently fertile for the profitable production of cotton, are being cultivated with perfect success. The area of land now regarded as valuable for cotton, is more than five times larger than that stated in the census returns of 1850.

"Cotton cannot be successfully produced further south than where there is sufficient frost to destroy the insects, which are so destructive to the plant in the tropics, and which, many years ago, caused its cultivation in the West Indies to be almost discontinued. The northern limit to which the culture may be carried is near the thirty-fourth degree of north latitude. That, however, depends on the elevation of the surface above the level of the sea—the mountain range being too cold. The southern limit of safe and profitable culture is from the twenty-ninth to the thirtieth degree of north latitude. These limits give a belt of about five degrees of latitude, in width extending from the Atlantic coast to the commencement of the elevated plains east of the Rocky Mountains. Cotton cannot be successfully cultivated in any region where there is a wet and dry season. The extremes of rain and drought are equally fatal to the production of the staple or fibre. Tropical rains cause the plant to grow too large, and either extreme wet or dry weather will cause the blossoms and young bolls to drop off. Therefore, climate is one of the first considerations in the selection of a region suitable for the cultivation of the cotton plant. That of the cotton states is peculiarly suitable for that purpose. The prevailing winds in spring and summer, charged with moisture, flow inland from the Atlantic, and are met by cold currents of air from the Alleghany and Rocky Mountains, which are attracted by the radiation of heat on the plains. The contact causes frequent showers of rain to fall throughout the spring, summer, and autumn, in sufficient quantity to preserve a healthy growth and early maturity of the plant, without endangering its product of cotton.

"The principal cotton-producing States are:—North Carolina, South Carolina, Georgia, Florida, Tennessee, Arkansas, Alabama, Mississippi, Louisiana, and Texas. The area of those States is 706,288 square miles, or 452,024,320 acres. The average product of cotton per acre is estimated at half a bale of 500 lbs. The crop of 1859, the largest yet made, was 4,500,000 bales, which at the average product required only 9,000,000 acres. It has been estimated that one half the area of the States named is suited to the cultivation of cotton; but for the purpose of avoiding all possible criticism, I will say one-third, or 150,674,773 acres, which at half a bale to the acre, will produce 75,337,338 bales of 500 lbs. each, and the entire weight of which would be 37,668,673,000 lbs. If we assume that the entire population of the earth amounts to 1,200,000,000, that quantity of cotton would give 3½ lbs. to every man, woman, and child on the face of the globe. This would be more than three times as much as is consumed in England, and nearly eight times the quantity consumed in France per head of the population. The consumption of Great Britain is stated to be 9 lbs., and that of France to be 4 lbs. per head of the entire population. If the consumption of the whole people of the world were to be brought up to the present consumption of France, they would require but 9,600,000 bales, or less than one eighth part of the crop which the cotton States could produce. If the consumption were to reach that of Great

* The American Crisis Considered. By Charles Lempriere, D.C.L., of the Inner Temple, Law Fellow of St. John's College in the University of Oxford. London: Longman. 1861.

Britain, it would require 21,600,000 bales, or a little more than one-fourth of the capital for production of the cotton States."

When questions can only be decided by experiment, it is obviously rash to attempt by logic and analogy to anticipate the result; yet we cannot help observing that as the cotton of India has already been greatly improved both in yield and staple, it seems to us far from improbable that improvement may hereafter be carried so far as to place it on a level with that of America. Up to this time the Indian cotton-fields have been selected with little judgment, and cultivated with little care. We have now a new region in which to make our experiments, we mean the valley of the Godavery, which resembles, in many respects, that of the Mississippi. With respect to Egypt, we may infer from all the accounts transmitted to us by the ancients, that the cotton formerly cultivated in the Aklotic valley was not inferior in fineness or length of staple to that of Lea Island. In modern Egypt, though samples of very beautiful cotton have been produced, it has rather been by chance than ingenuity, since the cultivation is carried on in a slovenly manner, with deficient capital, and still more deficient knowledge. Until very recently, the same remarks might be justly applied to the Indian cultivation, which has been carried on at random, though now at length—too late, we fear, to avoid much inconvenience—the persons most interested are endeavouring to make up for former neglect. We regret not to be able to speak well of Mr. Lempriere's book, which, however, can hardly fail to be generally condemned in this country, where little sympathy with slave owners exists, notwithstanding the need we have of American cotton. As a nation, we would rather that right should triumph in the United States, even though it should be to our own detriment, than that the spread of slavery should be encouraged, whether for our profit or that of any other people. Of course every man deserves a fair hearing, and to that we recommend Mr. Lempriere, but we shall be greatly mistaken if his production be not more roughly treated by others than it has been by us.

A NEW BIOGRAPHICAL DICTIONARY.*

It is not generally our custom to notice at any length new editions of established works; but we feel that we may fairly be excused for making an exception in favour of the present book, the old editions of which, owing to the Russian, Chinese, and Indian wars, are put fairly out of date, and require to be brought down to the present day, in order to make the book of service as a work of reference. O'Byrne has been already, for many years, known as an encyclopædia of naval biography, and its statements being taken from authentic papers in connection with the Admiralty, have always been regarded, and deservedly, as of unquestioned authority. The narrative of each officer's professional services is given, without any partial comments or criticism, as a simple record of facts, embracing even the most minute particulars, with an elaborateness which we have never been able to find elsewhere. When we add, that the book is characterized not only by the greatest industry in compilation, but by lucidity of arrangement and simplicity of style, we have only said what is true; but we have said enough to recommend O'Byrne for a place in every well-assorted public and private library. To the profession at large the importance of a book like "O'Byrne" cannot be overrated, as affording an additional incentive to gallant and daring services by the publicity which it guarantees so effectually—a publicity which will do more than any single thing besides to give a fair chance to struggling merit where unbefriended by aristocratic connections and Admiralty patronage; and, in a word, to set the Browns, the Joneses, and the Robinsons of the service on an equality with the Greys and the Elliots, who have too long enjoyed a monopoly of naval preferments. We only wish that the army had a similar volume, giving the services of our officers in full, as such a book would materially assist his Royal Highness the General Commanding-in-Chief in his selection of the best officers for Colonelcies of regiments. We ought to add, that the present instalment of O'Byrne comprises a fourth part of the alphabet, extending to the end of letter D.

LITERARY INTELLIGENCE.

THE last historical romance of Mr. Harrison Ainsworth, "The Constable of the Tower," is exciting a great deal of attention amongst literary circles on the Continent; and a translation of the work into the German language, by Herr L. Lenz, is about to be published at Hamburg. "The Constable of the Tower" is an interesting and instructive exposure of court scenes and secrets at the close of the reign of Henry VIII., and during the administration of the Protector Somerset, in the time of Edward VI. We are not surprised to hear that, having first been approved of, when published in *Bentley*, its appearance, in a collected form, as a three volume novel, has proved a decided success.

Mr. A. W. Bennett, of Bishopsgate-street, has in the press a work, intended as a Christmas gift-book, on the "Ruined Abbeys and Castles of Great Britain," edited by William and Mary Howitt, the illustrations consisting of photographs by some of the most eminent English artists, including Bedford, Sedgfield, Wilson, and Fenton.

The second part of Mr. Green's "Euclid particularly Applied," containing books 3 to 6, will be published early in October, by Mr. John Heywood, of Manchester. We understand it will be dedicated to Mr. Fairbairn, with his permission.

Messrs. Smith & Elder have nearly ready "The Lady's Guide to the Ordering of her Household, and the Economy of the Dinner-table." The object of this work is to aid the young mistress of a family to reform her dinners and to regulate her household, by showing how to secure the most efficient co-operation of her servants, in providing an inviting yet frugal table, and increasing the

comfort and elegance of the house. The author gives the fruits of her own experience in housekeeping, and all the information contained in this volume has been tested in actual practice.

Mrs. Yelverton's "Martyrs to Circumstance," just published by Mr. Bentley, contains all the real incidents in the life of this remarkable lady. The Scotch marriage, her adventures in Ireland, the Irish marriage, the honeymoon, and the voyage to France, they are all faithfully revealed. This book has already sold to a very extraordinary amount.

M. Guizot's new work, "The Church and the Christian World in 1861," is to be published in England by Mr. Bentley.

"East Lynne," Mrs. Henry Wood's story of modern life, will be published by Mr. Bentley in a few days. This lady published a very popular work some time since, entitled "Danesbury House," of which no less than 20,000 copies were sold. "East Lynne," it is reported, is likely to raise still higher the popularity of this writer.

Francatelli, the greatest cook of our time, has just completed for Mr. Bentley a new work, "The Cook's Guide," which includes, also, the art of confectionary, and the best mode of pickling and preserving. The first edition was disposed of on the day of publication.

Mr. Jesse's "Memoirs of Richard III. and his Contemporaries" will be published this month. Upon this book the author has been long engaged, and the result is a work of considerable interest and importance.

Japan is still but very little known to us. But since the commercial treaties with England and France with Japan, it has become an increasing subject of interest. Her Majesty's late Consul there, Mr. C. Pemberton Hodgson, who had rare opportunities of acquiring information, has just completed an account of his residence at Nagasaki and Hakodate, at which places he was British Consul in 1860, which will give us the latest accounts of this most interesting country. This book will be published by Mr. Bentley.

Messrs. A. & C. Black announce a "Manual of Hygiene," under the superintendence of Dr. Letheby and Dr. Lankester, which is intended to be a guide to the duties of officers of health. The adulterations of food, and the processes for detecting them, will form a prominent feature in the Manual. The same firm have also in the press a "Class Book of French Literature," with biographical notices, notes, and chronological tables, by M. Gustave Masson, of Harrow School.

Messrs. Chapman & Hall will this day publish the fourth edition of Mr. Charles Dickens' "Great Expectations."

Messrs. Bell & Daldy are preparing for the press a work on "Home Life in Palestine," a new volume of Sermons by the author of "The Second Adam and his Birth;" and the first volume of a work on "The Acts and Writings of Apostles," by the Rev. Pickering Clarke, late Curate of Teddington, Middlesex.

As a sign of what may be expected, the *London Halfpenny Newspaper*, after existing four weeks, has retired into total oblivion.

Mr. Tinsley will shortly publish another work from the pen of Mr. Sala, entitled "Dutch Pictures; with some Sketches in the Flemish Manner."

The new comic journal, *Fun*, about to be started, is, we believe, under the superintendence of Mr. Byron, a gentleman known as the author of some of the most successful burlesques and farces.

In Denmark has appeared a "Booksellers' Annual,"—the second year of its publication—much upon the same plan as the German "Booksellers' Annual," published by Schulz. We learn from it that the Danish Booksellers' Association dates from 1837, and is composed of 26 members; the Norwegian Association dates from 1851, and numbers 53 members; and the Swedish Association, which was founded in 1843, has 63 members. In Copenhagen there are 78 bookselling houses; 128 in the rest of Denmark; 19 in Christiania; 50 in the rest of Norway; 22 in Stockholm; 90 in the Swedish provinces; and 14 in Finland.

In the library of the State department of Washington there are upwards of 3,000 volumes of American, English, French, Spanish, Mexican, and Chinese newspapers, all complete and well bound. There is a complete set of the leading American democratic papers from 1808 to the present time.

During the past week the Count de Montalembert has appeared with a new pamphlet in Paris, entitled "Une Nation en Deuil: la Pologne en 1861."

The two first volumes of "L'Histoire de l'Empire Romain par Laurentie," to be completed in four volumes, has been published in Paris within the last few days.

Messrs. Marc & Co., of Paris, announce the "Almanach d'Illustration pour 1862."

LIST OF NEW BOOKS AND NEW EDITIONS.

FROM SEPTEMBER 13TH TO SEPTEMBER 19TH.

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| Archbold (J. F.). Law of Bankruptcy and Insolvency. 12mo. 13s. Simpkin. | Hard's Tourist's Guide through Ireland. Feap. 3s. 6d. Simpkin. |
| A Life Long Story. Post 8vo. 7s. 6d. Simpkin. | Hamilton (Sir W.). Lectures on Metaphysics. Second Edition. £1. 4s. Blackwood. |
| Adams (Rev. H. C.). Schoolboy Honour. 12mo. cloth. 3s. 6d. Routledge. | Murchison (Sir R.). Geological Map of Scotland. In case. 5s. Blackwood. |
| Biden (W. D.). Rules, Formulae, and Tables for the Valuation of Estates. 12s. Layton. | Olmstead (F. L.). Journeys and Exploration in the Cotton Kingdom. 2 vols. Post 8vo. cloth. £1. 1s. Low & Sons. |
| Brief Memoir of the Rev. W. Dunn. Feap. 8vo. cloth. 2s. Hatchard. | Oxenden (Rev. A.). God's Message to the Poor. 18mo. cloth. 6s. Hatchard. |
| Bradley's Manual on Illumination. Eighth Edition. Post 8vo. cloth. 2s. 6d. Winsor & Newton. | Plimsoll (T.). Our Black Diamonds. 12mo. cloth. 2s. Weale. |
| — Sewed, without Companion. 1s. Winsor & Newton. | Preston (W.). Illustrations of Masonry. Seventeenth edition. 12mo. 9s. 6d. Spencer. |
| Cook (M.). History and Articles of Masonry. Post 8vo. 7s. 6d. Spencer. | Recollections of the Past. 16mo. cloth. 3s. 6d. Saunders & Otley. |
| Caron (Jules). First French Reading Book. 12mo. 1s. Simpkin. | Shields (R. J.). The Knight of the Red Cross. 2s. 6d. Hogg. |
| Crowe (Mrs.). The Story of Arthur Hunter, and other Stories. Feap. 8vo. cloth. 2s. Hogg. | Stephen (H.). The Book of Farm Buildings. 2 vols. £1. 11s. 6d. Blackwood. |
| Charlotte Elizabeth. Stories from the Bible. Feap. 8vo. cloth. 2s. Hogg. | Sharp (Samuel). On Egyptian Hieroglyphics. 8vo. 10s. 6d. Moxon. |
| Connery (J.). The New Speaker. Post 8vo. cloth. 10s. 6d. Saunders & Otley. | Turner (W. M.). El-Khuds, the Holy; or, Glimpses in the Orient. 8vo. cloth. 15s. Trübner. |
| Fitzwygram (Lieut. Col.). Notes on Shoeing Horses. Demy 8vo. cloth. 5s. 6d. Smith & Elder. | Walter (Rev. W.). Rays of Gold. 32mo. 1s. 6d. Simpkin. |
| Gavock's Church Catechism Expanded. 12mo. cloth. 1s. 6d. Longman. | Wilberforce (Samuel). Agathos, and other Sunday Stories. 18mo. cloth. Twenty-third edition. 2s. 6d. Seeley & Jackson. |
| Hills and Plains. 2 vols. Post 8vo. cloth. £1. 1s. Smith & Elder. | Zadkiel's Ephemeris for 1862, 1863, and 1864. 12mo. sewed. 2s. Berger. |
| Home Sketches; or, Who are the Happy Ones? Post 8vo. cloth. 2s. 6d. Hogg. | — Handbook of Astrology. 12mo. cloth. 3s. 6d. Berger. |

* A New Biographical Dictionary: comprising the Services of all living Naval Officers. By William R. O'Byrne, Esq., F.R.G.S. A new and enlarged Edition. London: O'Byrne (Brothers), Adelphi-terrace. 1861.

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